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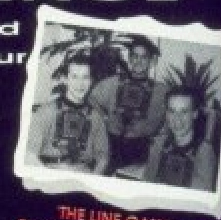
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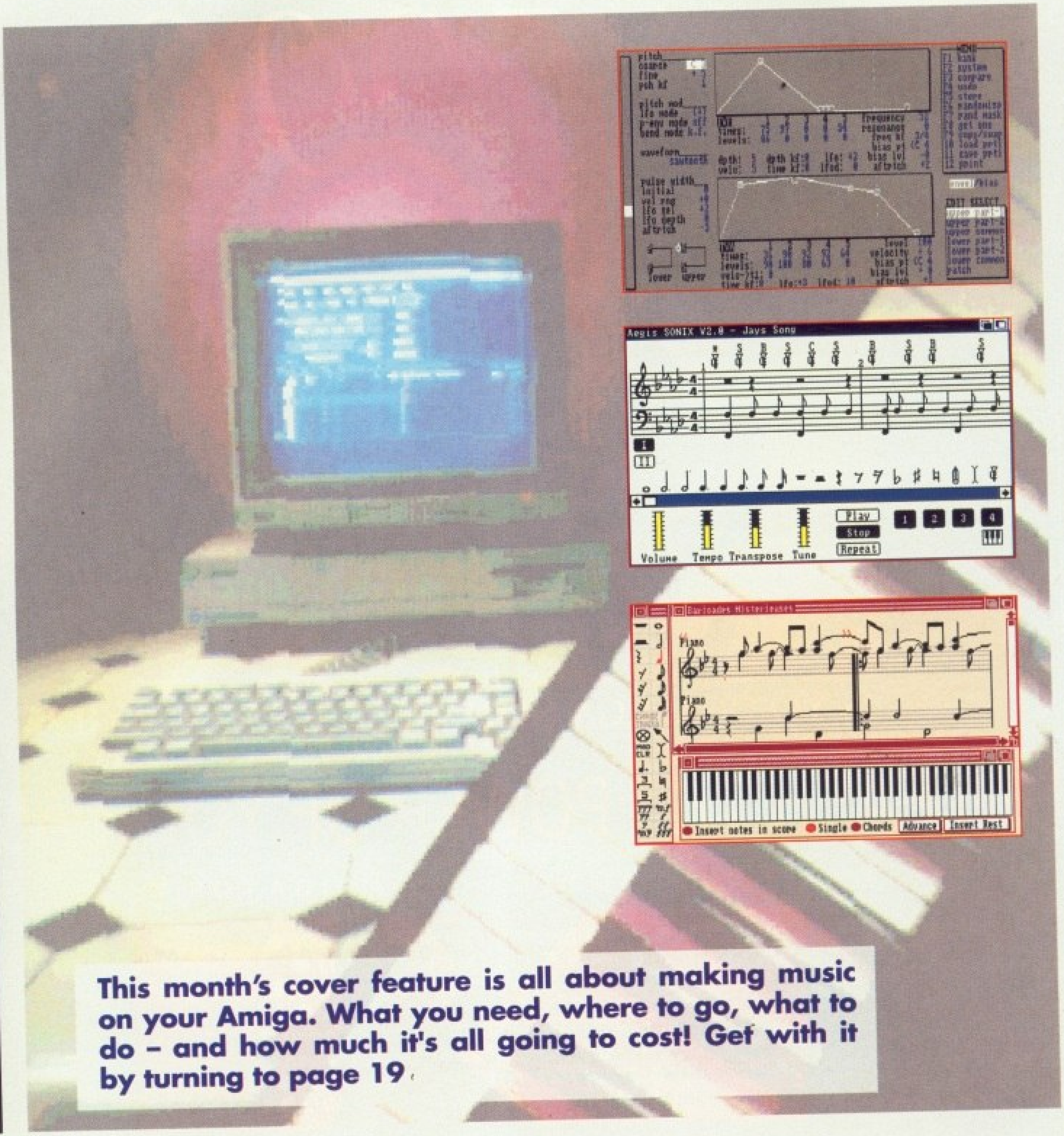
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COVER STORY



This month's cover feature is all about making music on your Amiga. What you need, where to go, what to do – and how much it's all going to cost! Get with it by turning to page 19.

WHO'S WHO

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THE DISK

Page 31

The disk that leaves all others with their electro-magnetic heads bowed. Every month, we present some of the best free software around and this month's no exception!

To begin with, we've got a corking bit of software for all you video freaks. For those with an enormous collection of E180s, Videocat provides a comprehensive catalogue of what's on each of them, together with details of remaining recordinge and so on. Next, there's a fun and instructional English grammar checker to help you to construct all those letters you're constantly writing to us! All this, and a thrilling 24-level platform arcade game – don't miss it!

CONTENTS

Presenting PROTEXT 5.0

Five years to the month after Protext version 1 was launched Arnor are pleased to present version 5, an enormous leap forward in both ease of use and performance.

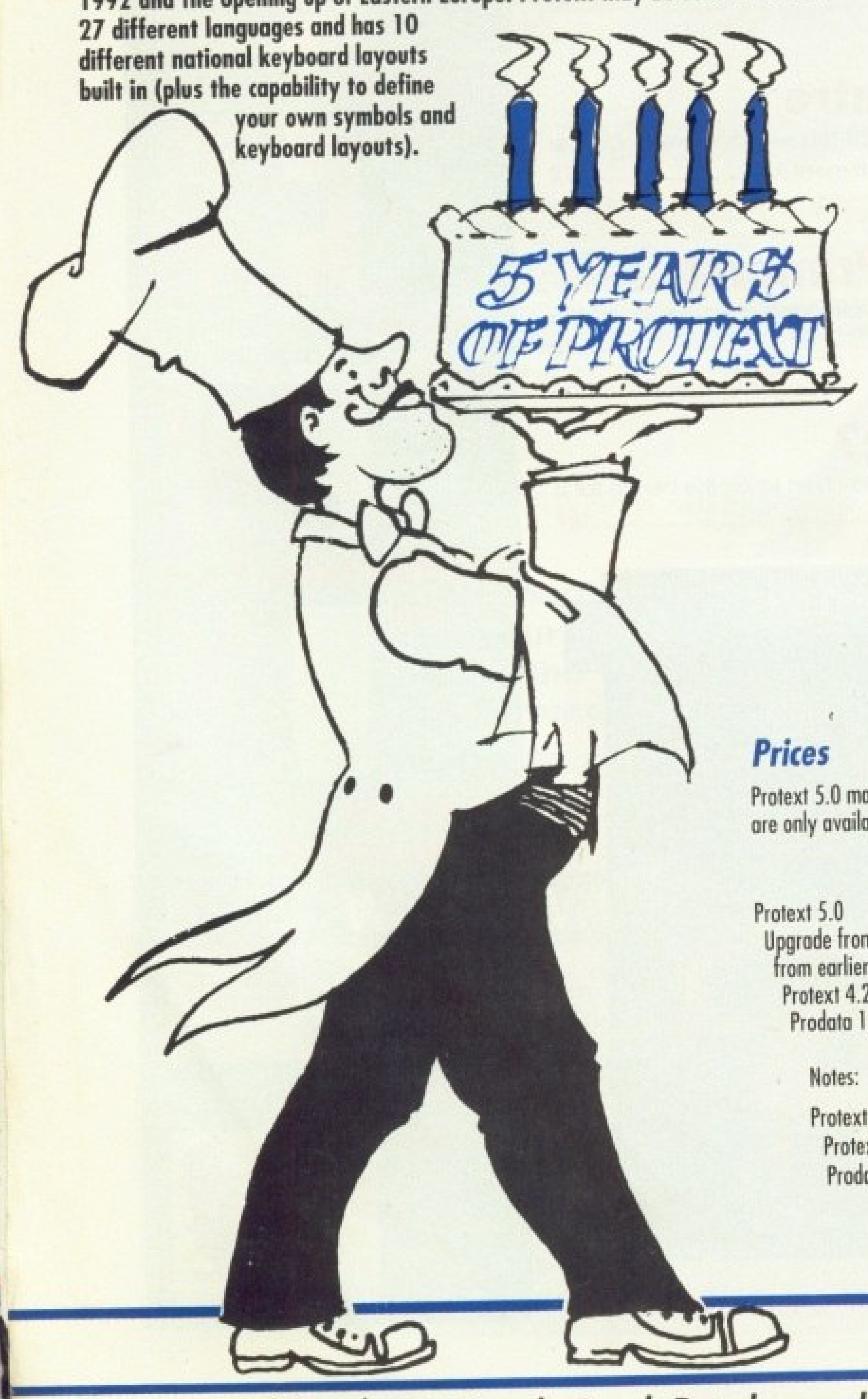
Protext 5.0 introduces a completely integrated system of pull down menus and dialogue boxes. The menus are among the many operations that may now be carried out with either the mouse or the keyboard. Protext really does give you the best of both worlds.

Protext 5.0 handles printer fonts flexibly and accurately. You can make full use of any number of proportional printer fonts, mix them freely within any line, centre them in headers, use automatically formatted footnotes. And Protext correctly formats your text as you type it, no matter how many font changes you use, showing you line and page breaks exactly as they will be printed.

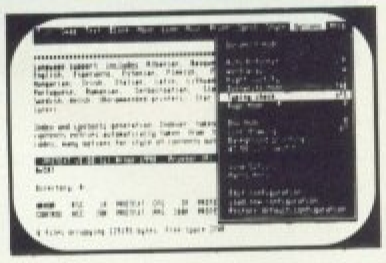
Protext 5.0 is still the fastest word processor around. Even though we have made all these major improvements we have taken great care to ensure that text editing is as fast as ever. The menus work smoothly and quickly even with high resolution displays. But of course, you can use Protext's efficient set of commands and keys just as before and 5.0 remains compatible with all earlier versions from 1.0 onwards.

Protext 5.0 is a worthy successor to version 4, which was described as "the best word processor at any price", "the best text processor on the Amiga" and "the most powerful word processor on the Atari ST" (AUI, ST/Amiga Format, ST User).

Protext 5.0 heralds a new era of multi-lingual European software, in time for 1992 and the opening up of Eastern Europe. Protext may be used in at least 27 different languages and has 10 different national keyboard layouts built in (plus the capability to define your own symbols and keyboard layouts).



The Features



☆ **New fast & easy to use pull down menu system** with dialogue boxes and alerts; file selector; mouse dragging to set blocks. Menus complement existing commands and keyboard shortcuts, do not replace them. Menus may be used with mouse or keyboard. Amiga version follows Intuition guidelines.

☆ **Enhanced printing capabilities** supports multiple proportional fonts; mixing of different font sizes on the same line; proportional formatting whilst editing; side margin, headers and footers independent of main text font. Tabs, decimal tabs and centre tabs. Extensive range of printer drivers supplied.

☆ **Multiple file editing** - up to 36 files may be open; split screen editing.

☆ **Graphics mode support** on PC allows use in virtually any text or graphics mode including 132 column or 75 line VGA modes; user defined characters and on-screen bold, italics and underlining now on all versions; use of 13 different accents on any character.

☆ **Language support includes** Albanian, Basque, Czech, Danish, Dutch, English, Esperanto, Estonian, Flemish, Finnish, French, German, Hungarian, Irish, Italian, Latin, Lithuanian, Norwegian, Polish, Portuguese, Rumanian, Serbocroatian, Slovak, Spanish, Slovene, Swedish, Welsh. (Note: some printers do not support all languages).

☆ **Index and contents** generation. Indexer takes marked words or phrases; contents entries automatically taken from titles wrapped in control codes; many options for style of contents output.

☆ **Spelling checker** features completely new 110,000+ word Collins dictionary with very fast phonetic lookup. Anagrams and find word pattern. Foreign language dictionaries (German, Swedish available now, others to follow).

☆ **Many other enhancements** including multi-line footnotes and endnotes; automatic timed save; add column or row of figures; indent tabs; find word at cursor; 40 column mode support; sentence operations; inter- paragraph space; much improved expression evaluator; self incrementing variables; Roman numerals; newspaper-style column printing; file sorting utility with special options for names and addresses; revised manual plus new tutorial guide.

☆ **And don't forget Protext still includes** background printing; box manipulation; macro recording; exec files; headers and footers; find and replace; mail merging; undelete; file conversion utility; configuration program; auto reformatting; on screen help; time and date; typewriter mode; line drawing; disc utilities.

Prices

Protext 5.0 may be purchased from any good computer shop or directly from Arnor. Upgrades from earlier versions are only available from Arnor and the original discs should be returned with your order.

	PC	Amiga	ST/TT	Archimedes
Protext 5.0	£149.95	£149.95	£149.95	£149.95
Upgrade from v4.2	£60	£60	£60	N/A
from earlier versions	£75	£75	£75	N/A
Protext 4.2	£99.95	£99.95	£99.95	N/A
Prodata 1.1	£79.95	£79.95	£79.95	due 1991 Q1

Notes:

Protext 5.0 requires at least 640K of memory on all machines
Protext 4.2 requires at least 512K of memory on all machines
Prodata requires 1MB of memory on the Amiga

ARNOR

Arnor Ltd (AMC), 611 Lincoln Road, Peterborough, PE1 3HA. Tel: 0733 68909 (24 hr), Fax: 0733 67299

WHAT'S new

TEN years ago, Roger Hulley started Alternative Software from the front room of his mother's house. He has just marked a further milestone in his business development by launching another label – Friendly Learning.

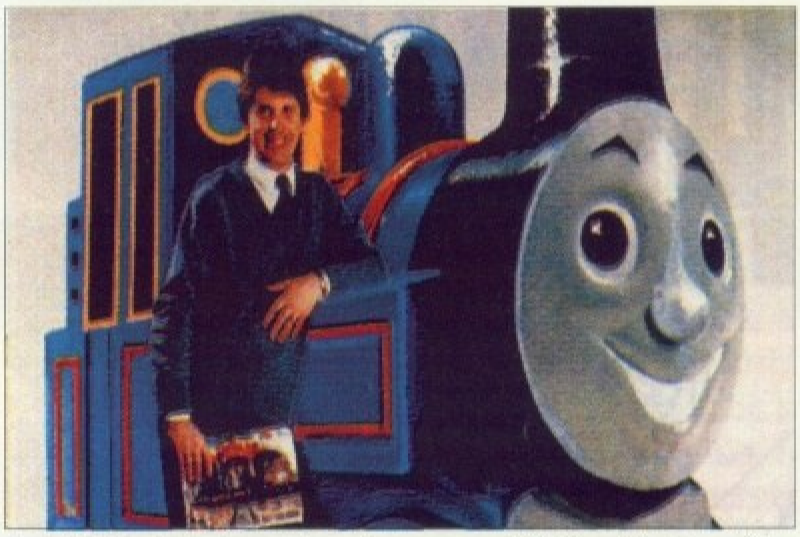
Aimed at providing colourful and enjoyable programs for younger Amiga people based on popular television and cartoon characters, Friendly Learning was launched from Alternative's West Yorkshire headquarters but Roger's family still have an active part in its development.

This comes from his four-year-old son Luke who is well versed in computer programs and provides an ideal opportunity for Roger to field test his new packages.

"Friendly Learning is a special label we have created for the education market with licences specially chosen to attract the under sevens", Roger told *Amiga People*. "With a four-year-old of my own, I felt there was a need for programs to target this younger age group and I can also understand the needs of parents who may not have a lot of computer knowledge.

"All the programs are controlled by joystick so parents don't need to teach their children how to use the computer. Once the programs are loaded, they ignore the computer and just use the joystick".

The first package features those lovable characters Sooty and Sweep and is called Sooty and Sweep's Fun With Numbers. Next in line is Thomas The Tank Engine's



Fun With Words. Amiga versions of both cost £19.99, include six levels of learning and are supplied complete with flash cards.

About to be launched are Postman Pat's Fun With Shapes and Sizes using the popular mailman and his friends in Greendale which have already been featured in a game from Alternative (0977 797777).

Future characters to be brought to the computer screen

AMIGA people

STEP INTO FANTASY

BILLED as "the ultimate tool for building a Virtual Reality", Domark's latest offering on the Incentive Software label is The 3D Construction Toolkit, due on sale in April.

For users in both educational and leisure markets, The 3D Construction Toolkit is claimed to be the first product to allow Amiga owners to create, design and plan a real environment then walk into that environment and interact with it as if they were really there.

Included with the utility will be a specially written arcade adventure created with the kit and featuring some of its effects and animations.



Better than Dreamland

"Using the kit is rather like building Lego blocks for adults", said a spokesman from Domark (081-780 2222). "You can shrink yourself and enter your new creations; interact with your surroundings, animate objects then get them moving to create an even more real effect".

Houses, streets and even small towns can be created in 3D. The package also has the scope to include rooms in buildings, underground scenes, vehicles and even space scenarios. Sound effects can be selected from the product's internal library and there is also a choice of ready-made environments.

Potential uses for the utility are the creation of 3D arcade games, adventures and simulations; 3D modelling and visualisation plus educational design,

AMIGA people

will be Huxley Pig, Super Ted and Fireman Sam.

Roger also plans to use some of the characters in new 16-bit games. These will include Thomas The Tank Engine, Huxley Pig and the vampire duck, Count Duckula. The Alternative games will cost £7.99.

KICK OFF CRAZY

Which piece of software was capable of drawing a crowd so large at a recent event in Germany that the police were called in order to control the frantic supporters? And which piece of software recently attracted 15,000 players to a league event in Italy, and is also responsible for similar bizarre events erupting in France, Spain and the UK?

The answer: Kick Off 2, the game which swaps boots and balls for bits and bytes. The ultimate football simulation goes from strength to strength. This now-familiar cult classic, which has taken Europe by storm, finally reached that Mecca of the English game, Wembley.



Crowds throng the aisles in anticipation

Thousands of players have been slugging it out during the last few months in regional rounds of The Computer Football Challenge Cup.

The play-offs were held at the Anco stand during the recent Shopper Show weekend, with the final being held on the Sunday.

Although Kick Off 2 is available for both the ST and Amiga, when things get serious there's only one machine. As a result, all the matches at the show were played on an Amiga.

If that isn't enough, the show also boasts the appearance of French, German, Italian and Spanish champions, not to mention the new hero of the English game, Neale Type.

The newly crowned king, Neale Type walked off with a smile and a handsome £1,000 cheque for his efforts. Steve McEwen, the unlucky runner up, was seen to be wiping away a tear with a wad of fivers amounting to a cool £500. Each of the final 16 received a medal, plus £100 to drown their sorrows.

The final went to a sudden death shoot out, leaving the outcome balanced on the first player to score. In the European competition, Neale unfortunately came bottom of the table, with the favourite and eventual winner Luca Caldiero heading back home with a cool quarter of a million in his hot little hand (Italian lire of course...).

TALKING TECH

AT a meeting in Cologne, a group of hardware and software developers have formed an organisation which could have important repercussions for the Amiga development community.

Called Grafexa, it's a multinational body which has stepped in to produce a common standard for devices offering more colour and higher resolution than the standard Amiga – an area which Commodore has failed to cover.

Grafexa will act as a forum for discussions on the new standard and will circulate newsletters

WHAT'S new

modelling and urban studies.

As *Amiga Computing* went to press, no price had been fixed.

NEW ON THE SHELVES

AMIGA people with Christmas present cash burning a hole in their pockets have a good choice of new Amiga books to curl up with on those long winter nights.

Former *Amiga Computing* writer Mark Smiddy has produced Master AmigaDOS 2 which covers version 2.0 of the Amiga operating system. In two volumes, it also deals with previous versions providing hands-on instructions and explanations on AmigaDOS commands.

AmigaDOS 2 is available through Bruce Smith Books (0727 41243) and is described as "the de-facto guide to all versions of AmigaDOS". Volumes one and two cost £39.90.

Also on the subject of AmigaDOS is a new offering from Abacus called AmigaDOS Inside & Out. An upgrade on the popular title, it now includes the 1.2, 1.3 and 2.0 operating systems.

As its name suggests, Amiga Printers Inside & Out is a full guide to using printers. Rounding off the Abacus range is Making Music With The Amiga for all the Midi fans who want useful tips.

Further details of the Abacus books can be obtained from AdamSoft on 0706 524304.

FANCY FRACTALS

VIRGIN Games (071-727 8070) have announced that they are to publish the next offering from Graftgold, the team responsible for hit titles such as Uridium, Simulcra and Super Off Road.

Based on 3D fractal technology, it's an original role playing game with the working title of Realms.

"Following the successful relationship we had with Graftgold on the superb Super Off Road coin op conversion, we wanted to work with them again on an original product", said director of Virgin Games Andrew Wright.

"Realms has been in development for about six months and we are very impressed with what we have seen".

Realms should become available in February but meanwhile, Virgin has had to postpone the release of the eagerly awaited Judge Dredd.

It should be due out any time now at £19.99 for the Amiga version.

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NEW! - AMIGA PACK

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A500 BATMAN PACK



The Commodore A500 Batman Pack must surely rank as one of the most popular computer packs ever! The pack features the **Commodore Amiga 500 computer** with **mouse controller** and **TV modulator**, plus four top software titles. The software includes: **'Batman The Movie'** - Rid Gotham City of the cunning joker, in Ocean's top selling title based on the blockbuster Batman film; **New Zealand Story** - high quality conversion of the leading arcade game; **Interceptor** - Dogfight with two F-16's in this leading flight simulator; **Deluxe Paint II** - top quality Amiga graphics package which set the standard for others to follow. Return the coupon for further details.

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AMIGA 2000



For the more serious or professional applications user, Commodore have a selection of systems based around the expandable Amiga 2000, at prices from £1295+VAT. The A2000 features a full 1Mb RAM (expandable to 9Mb), 9 system expansion slots, plus IBM compatibility with the use of PC-XT or PC-AT bridgeboards. Complete and return the coupon, putting a tick in the A2000 box, for details of A2000 computer systems.

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FLIGHT OF FANTASY

Flight of Fantasy is the very latest Amiga 500 pack from Commodore, featuring BRAND NEW software releases, to make this the most spectacular A500 pack ever! The pack features the Amiga 500 computer with mouse controller and TV modulator, as well as four top software titles. These include the following:

DELUXE PAINT II:

The high quality graphics program that set the standard for other Amiga art packages. Deluxe Paint II includes powerful, easy to use tools that bring out the artist in you. Create masterpieces, presentations, 3D perspectives or just doodle.

ESCAPE / ROBOT MONSTERS:

Here's something completely different - a science fiction story with comic book style graphics. Our heroes Jake and Duke are on the Planet X rescuing Humans who have been captured by the Robot Monsters and forced to create an evil Robot Army to DESTROY EARTH! Jake and Duke fight their way through hordes of evil Robots to help the Humans escape.

RAINBOW ISLANDS:

Slip on your magic shoes, practise throwing a rainbow and you're ready to go island hopping. From the Island of Doh to Monster Island, you will encounter Doh himself, stinging insects, lethal combat machines, mechanical assailants, the formidable beings of legend and folklore. Finally enter the world of darkness and its inhabitants.

F29 RETALIATOR:

The ultimate in flight simulation with a choice of two aircraft and four battle environments with dozens of different tactical missions. Aerial combat, strategic bombings, interactive ground based battles, seagoing carriers ... the list of features is endless. Real time cockpit displays, including 'true radar' enhance the realistic feel of this stunning simulation.

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F29 Retaliator	£24.95
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PACK PRICE:	**£399.00**

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Before you decide when to buy your new Amiga computer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your Amiga, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new products? At Silica Shop, we ensure that you will have nothing to worry about. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now for our latest Free literature and begin to experience the ''Silica Shop Service''.

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AMIGA people

including ideas and comments.

"Commodore have not defined any standards for devices which have more colours and resolutions than the standard Amiga", said Martin Lowe of Amiga Centre Scotland – one of the leading lights of Grafexa.

"Anyone producing hardware and writing software hits problems in extending the Amiga's capabilities. They are faced with up to a dozen boards. Through this new organisation, we will help to eradicate this problem".

It is planned to publish the first draft of the new standard in time for the European Developers' Conference in Milan in February.

THE MIDAS TOUCH

TWO lucky people will soon be receiving gold plated Amigas as part of Commodore's celebration for reaching sales milestones.

Amiga sales in the UK passed the half million mark in November and worldwide sales passed the two million mark during the same month.

When contacted by *Amiga Computing*, Commodore were still working on plans for a charity tie-up with the presentations. It was not clear whether the special Amigas will go to the puchasers of the 500,000th and two millionth machines with a donation to charity, or if they will be auctioned off.

While Commodore admitted that the Amigas probably won't have real gold leaf, they will come with special plaques.

EURO ACTION

FROM his new base in the South of France, former technical director of Micronet, Mike Brown, has plans for an Amiga version of his interactive multi-user game Astroid and also reports that the Amiga is gaining in popularity across the Channel.

First seen at the recent Micro 90 exhibition in Paris, Astroid was launched by Third Millenium Systems, the company formed in 1988 by Mike and Shades author Neil Newell to develop and market multi-user entertainment throughout Europe and North America.

It's a fast-moving game of economic and military strategy set in the lawless mining communities of a remote and hostile asteroid belt.

Distributed in France by Canal Quatre, Astroid is currently only available to PC and Atari ST owners because of the predominance of the ST in that country.

But that is about to change as the Amiga overhauls the ST in Gallic homes.

"In technical terms, there is no reason why Astroid cannot be transferred to the Amiga", said Mike from his office close to Aix en Provence. "The only reason we have not written an Amiga version so far is because there are a 250,000 Atari STs in France and only twenty odd thousand Amigas.

"I now get the impression that the Amiga is getting a better hold in France and over the next few months the pressure to bring out an Amiga version of Astroid will be difficult to resist.

"We would certainly like to bring it to the UK but that depends on the future of the telematic services there. Although it is only the Model T version, Astroid is the first interactive multi-user adventure game and points towards the future. It is indicative of the way home entertainment will go.

"England is an important market and I would like to see Astroid being successful in the UK. We would be looking towards some kind of joint venture deal with someone already in the business or a large software house and have already made some overtures.

"Astroid is the most sophisticated game of its kind today and in its underlying architecture we see a glimpse of the potential offered by developing network and terminal technologies for interactive entertainment".

INFOGRAMES PUSH

FRENCH software house Infogrames has increased its UK presence. Joining Henri Coron at the new London office are Pascal Blandin and Dominic Cor who is responsible for marketing and

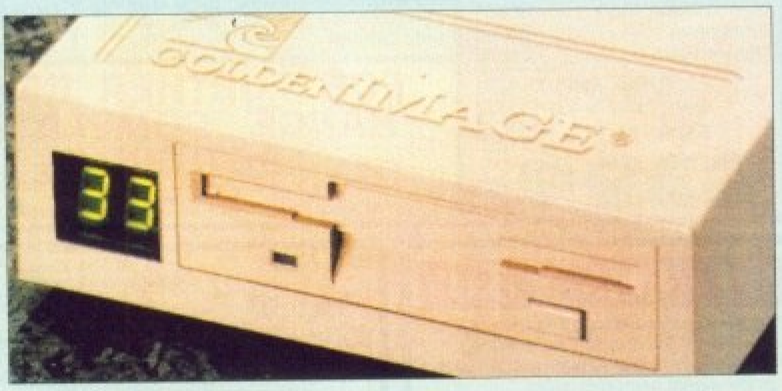
WHAT'S new

TAIWAN TIDBITS

TAIWANESE peripheral manufacturers Golden Image now have a UK outlet, which is providing new kit for Amiga owners at reasonable prices. It includes mice, disc drives, RAM cards and scanners.

The Golden Image hand held scanners offer 400 dpi and come with software and power supplies for a price of £199. The range of RAM cards include the Golden Image RC500 alternative for the A501 and the RC-2000.

"The RC-2000 is a full-size card which will rocket your memory from between its populated 2Mb and 8Mb and is user expandable", says Golden Image marketing manager Andrew Banner.



Disc drives for the Amiga start at £59 while mice run from £39 for the optical variety and £24 for the mechanical.

"Golden Image is a hugely successful range of computer supplies from Taiwan", adds Banner. "Our policy is to sell quality goods at ultra low prices through a network of more than 400 dealers".

The firm can be contacted on 081-518 7373.

CHEAPER MEMORY

CHEAPER chips are the offer from Terrabyte Electronics (0865 794848), the new company formed by international semiconductor buyer Peter Lioncourt and computer marketing man Bruce Everiss.

Computer memory chips are increasingly traded as a commodity but the price advantages filter down slowly to end users.

Terrabyte intends to buy memory at international commodity prices and sell it directly to users.

WHAT'S new

press relations.

Christelle Gesler from the French headquarters promises some interesting products in months to come. Infogrames can now be contacted on 071-738 8199.

WHATEVER NEXT?

AUTHOR of multi-user adventure game MUD, Richard Bartle, has come up with an interesting snippet. When players enter the game, they are allowed to choose a persona, including the sex.

In the UK, 95 per cent of the players are male but around half of the alter egos are female!

We're sure this must mean something about the characters who play multi-user games but we're not quite sure what.

UPGRADE FOR CHARITY

FOLLOWING yet another blockbusting Children In Need Appeal, owners of an old Amiga who want to upgrade to a new Commodore A3000 now have their chance to help swell the charity's coffers.

Computer dealer Trevor Monahan of Skegness-based MCS (0754 610217) is offering a trade-in deal with up to £1,000 off the price of an A3000 depending on the age and condition of the old machine.

"The offer is only for machines which are still working and are in reasonable condition", he told *Amiga Computing*. "We will give purchasers of new A3000 machines up to £1,000 off the price and will send the old machines to the BBC who will be able to sell to raise cash or donate them to charities".

OFF TO KENYA

AMIGA owners interested in mice could soon be looking at a much larger variety of animals through a competition run by computer mouse company Naksha (0925 56398).

First prize in the competition is a two-week balloon safari holiday for two in Kenya. Entrants must supply a caption for the picture, which appears on entry forms available from computer dealers or direct from Naksha.

VIVE LE KONIX

THE Konix range of joysticks has been taken over by French distributor Innelec, who beat off a number of other bids with a price rumoured to be around £200,000.

As reported in *Amiga Computing* last month, Konix fell into receivership on October 2, reputedly owing in excess of £1 million. Accountants Peat Marwick McLintock have been handling the receivership and sale of the joystick range.

The Konix products will join Innelec's range of Amstrad hardware, leisure and business software and other lines of joysticks. A spokesman for Peat Marwick said Innelec are already continuing manufacture of the four main product lines and will soon extend this to the full range with no loss of jobs at the Welsh factory.

Distribution will be through the normal channels but a question mark still hangs over the future of the Konix Multi System console which is not included in the Innelec deal.

Head of Innelec, Denis Thebaud is concentrating on keeping the firm running before taking a closer look at extending the distribution of Konix products. Last year, Innelec claimed sales figures of £15 million.

RANDY ANDY RAPPED

ADVERTS for Ubisoft's game Ranx are the latest target for Sandra Vogel, leading light of Oasis – The Organisation Against Sexism In Software.

In the Oasis newsletter, Sandra runs a picture of the offending advertisement and asks members to join her in complaining not only to magazines running the advert but also to the Advertising Standards Authority.

The advert shows a scantily dressed woman in the clutches of an android whose hands have strayed where they shouldn't. Sandra reckons it goes "just that bit too far".

Apparently, Capricorn Computers who supply public domain software and specialise in adult games. Their disc of "rape games" has apparently offended many Oasis members.

The group now has nearly 100 members of which 75 per cent are female.

AMIGA people

BETTER BASIC

GFA Data Media (0734 794941) are poised to launch a major upgrade to the Amiga version of their programming language GFA Basic. It will follow the launch of PC, Windows 3.0 and OS/2 1.2 versions of the package and will include many of the new commands incorporated in them.

"The PC versions include a lot of new commands and for the sake of compatibility across the machines, we will be incorporating these in new Atari ST and Amiga versions", said Les Player of GFA. "The timing depends on how many of the new commands are included but we expect Version 4.0 to be available in the first quarter of 1991".

GFA Basic is an easy-to-learn but powerful programming language, which includes around 500 commands with both interpreter and compiler.

Improvements in Version 4.0 are expected to include a more powerful directory, file handling and system control commands.

GFA has also been appointed as the UK's exclusive distributor for the range of music software and hardware from French specialists Digigram.

Amiga products now available through GFA include Track 24 v1 at £75, Studio 24 v2 at £150 and Big Band v1 at £159.

ATONCE REVISITED

The review of the ATonce PC emulator last month quoted perform-ance figures of 2.8 on the Norton SI scale, which some of you might have found surprisingly slow. This is because our board was faulty! The real figure should have been 6.4.

Incidentally, users of the board can recieve version 1.1 of the installation software by returning their disks to Silica, who'll replace them free of charge.

DIGITAL RETRACTION

Last month's show report included a passage on the Check-mate Digital vs A1500 Ltd argu-ment over Mick Roots's expansion unit.

We used the word *injunction* in this piece. This was, in fact, incorrect as no legal proceedings have taken place, and Checkmate Digital's Steve Jones asked us to clarify things.

Sorry Steve!

He'd like to assure customers that Checkmate have been officially distributing the *full production model* A1500 and will continue to do so.



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That was the year that was...

An irregular look at what happened when your Grandad was wielding his silicon!

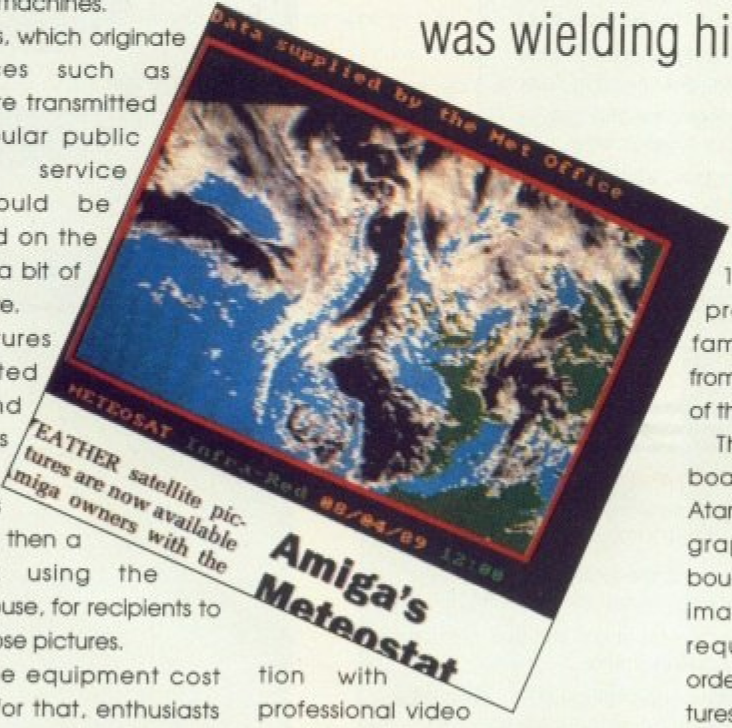
July 1989: Weather station

After being available for some time on other micros, weather satellite pictures from Microtext finally became available for the Amiga.

Using any unexpanded Amiga, a simple Microtext Teletext adaptor and an ordinary domestic television aerial, Amiga owners could at last receive quality colour pictures on their machines.

The images, which originate from sources such as MeteoSat, are transmitted on the popular public information service CEEFAX, could be reconstituted on the Amiga using a bit of clever software.

The pictures were updated regularly and appeared as an index on the Amiga's screen. It was then a simple task using the machine's mouse, for recipients to pick and choose pictures.



EATHER satellite pictures are now available miga owners with the

Amiga's Meteostat

In 1989, the equipment cost £143.52, but for that, enthusiasts could produce weather forecasts rivalling those of John Kettley.

June 1989: Amiga to the rescue

The Lockerbie air disaster sent shock waves of revulsion around the world. Many lost their lives and one of the biggest investigation teams was set up to sift the evidence in an attempt to discover just who was responsible. And what was at the heart of that investigation? Non other, than an Amiga 2000.

Coupled with video film, the Amiga was used to reconstruct the last moments of the doomed craft.

Dumfries and Galloway police installed the system after consultation with professional video specialists Video One Professional Video.

The system produced stills from thousands of hours of video recordings by using a digital frame store. The machine's fantastic graphics capabilities were then used to analyse and enhance the stills so that tiny details could be picked out. The results were printed on a Polaroid freeze frame film recorder.

Sergeant Bob Owens of Galloway police: "The Amiga 2000 system obviously gives us the potential for crime detection by using its excellent graphics and ability to grab video images so we can output them as photographs. We are currently looking at the lessons to be learned from Lockerbie."

November 1989: Gargantuan graphics

In the closing months of 1989, Amiga owners were promised the arrival of the famous Parsec graphics board from Elmtech Research by the end of the year.

The breath-takingly powerful board, already available for the Atari ST, was much sought after by graphics enthusiasts who had bought the Amiga for its superior image generation but who required even more power in order to produce the kind of pictures they required.

Elmtech's Martin Lockhart told *AC* "Parsec for the Amiga is the next project we will be looking at. Once we go into full production for the ST and get rid of a lot of back orders, work will start on the Amiga and we are confident that it will be ready by the end of the year. We will be selling it for £918."

The Parsec promised a programmable screen resolution ranging between 640 x 400 and 1024 x 768 pixels.

There was a choice of 16 colours a line from a palette of 4096 for the basic model and 256 colours per line from a palette of 16,777,216 on the upgraded board.

And how was all this power generated? The Parsec had a Texas Instruments TMS 340010 32-bit processor running at an amazing 50MHz with a processing speed of 6.25mips. In effect, an entire self-supporting micro on a chip.

Unfortunately, but not entirely unexpectedly, the Parsec failed to appear...

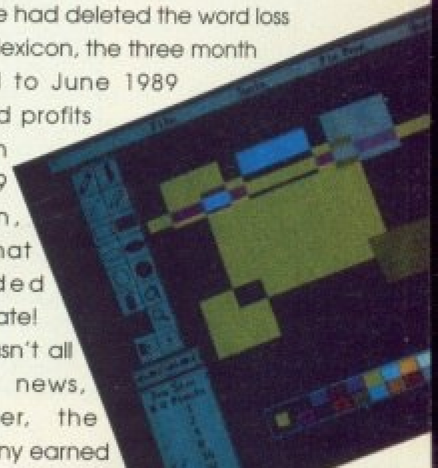
October 1989: Profit and profitability

After several years in the black for Commodore, the company went through the extremely unpleasant process of reporting a loss for the period April to June 1989.

After initial successes with 8-bit computers such as the C64, Commodore rapidly went downhill, closing its modern processing plant in Wales and generally tightening its belt.

The release of the Amiga, however, tuned the company's profitability upside down and revived Commodore's flagging fortunes.

But then, just when Commodore had deleted the word loss from it lexicon, the three month period to June 1989 showed profits down by $8.9 million, and that included tax rebate!



Parsec is on its way

It wasn't all bad news, however, the company earned a whacking $50.1 million for that year. Irving Gould, Commodore's Chairman said that "the fourth quarter losses were a result of the stronger US Dollar and a softening of demand."

And now? Beginning with the Christmas 'Batman' pack, success after enormous success has ensured that Commodore is probably the most buoyant manufacturer in the microcomputer industry..

A1500

A real add-on, or just go-faster stripes? Stevie Kennedy puts his silicon where the sun don't shine

You've seen it before. In fact, you've seen it before in this very magazine. The A1500 is the first major expansion kit to offer a completely new keyboard housing and system box to our old friend the A500, and has attracted a lot of attention since it was first announced over six months ago.

The new case promised A500 owners the chance to upgrade beyond the bounds of Commodore's conspiracy to limit their machine, to use A2000 expansion cards, to mount hard and floppy drives inside the casing, and to do all this from the remoteness of a separate keyboard.

The A1500s you've seen reviewed before now have all been pre-production models marketed by Checkmate Digital. The 'new' A1500 is being sold by A1500 Ltd, pending legal action over who has the right to sell the thing. The only point in this debate which concerns us is the claim that the unit now on sale is supposed to be the full production model and not a prototype. As such, you might expect all the bugs to have been ironed out and to see a piece of kit which can be purchased and used by any average punter, so we've examined this latest model with all these points in mind.

Installation

For £200 you get the basic unit, known as Shell Expansion Kit 1. This unit comprises the standard separate keyboard box and the system box. You simply take the Amiga to bits, fit the keyboard in the first box, and the silicon remainder in the second box, using nothing more than a screwdriver and maybe an adjustable spanner. Nothing could be simpler, right?

Wrong! One of the trickiest parts of assembling the original model was that the internal drives had to be mounted on a botched-up sort of mount, necessitating the adding or taking away of washers in order to make it the correct height to fit smoothly into the case.

The second major gripe was the dodgy nature of the keyboard which, in its new case, was balanced on a bed of foam, turning typing into a trip to the bouncy castle for your fingers. Has the new model fixed these faults?

Aligning the drive (although now a little easier) is still, unfortunately, a major pain in the neck, and the exercise of fitting it serves mainly to highlight what is a major design fault in the unit. The way the A1500 fits together makes correct alignment of all internal parts necessary before you fit the outer sleeve. In other words, it is well nigh impossible to make adjustments to the height or alignment of the drive, or the new box-mounted LEDs once you've slid on the outer sleeve.

This means a great deal of messing about sliding the thing on and off until you're happy with what you've got, then taking it off yet again to give the nuts their final turn to fasten everything down. It would surely have been a simple matter to change the design so that everything fitted into a four-sided tray and all tweaking and adjustments done before the lid was bolted down.

The keyboard however, is certainly a neater fit in its new case, and doesn't bounce at all. It slots in quite nicely and provides a solid typing platform. However, the keyboard shows up another of the unit's short-comings. Why splash £200 on a posey box when in the end you're still stuck with the A500's keyboard? I know that opinion on this is divided, but the 2000's keyboard is in my opinion a much nicer proposition.



Professional looks, complete with box -mounted LED's . . . but is this all it is?

In effect, the keyboard add-on part of this unit is little more than a curly cable and a bare metal shell which doesn't even have adjustable feet so that the angle of the keys can be set for typists. It looks very nice, I have to admit, and provides immense pose value to the upwardly-mobile A500 owner, but as a basic upgrade its specifications belie its price.

Which brings me to another point. For £200 I'd have expected to be supplied with at least the kit to mount another internal floppy (£19.95 extra), and at least one extra expansion slot (DUC board for this costs £69). What I got, however, was a cosmetically very sexy box, practical application of in it's standard form, is limited to placing the keyboard in my lap rather than on the desktop.

Personally, I'm a little doubtful as to how many people there are who actually like to type on their laps, let alone how many of those would pay £200 for the pleasure.

Bad news?

So is it bad news for the A1500? Far from it. Is a laudable attempt at meeting what is a very real desire on the part of many loyal A500 owners to expand their machines without having to go to the expense of an A2000, and is one of the best things to hit the A500 for years.

No doubt there are hundreds of Amiga musicians out there who are drooling at the prospect of being able to mount their Amigas in professional 19 inch studio racks, and this will be possible for an extra £50.

I've also no doubt that many of you would kill for the chance to get all that spaghetti, such as extra drives and your A590, not to mention flicker fixers (oh, joy!), inside one big creamy case.

For those people the A1500 is a dream come true, even if it is overpriced. For the rest of us, an outlay of £200 should provide a bit more than just the extra potential – desirable though it is offered by the A1500.

I would say there just isn't enough in the box to justify the price:

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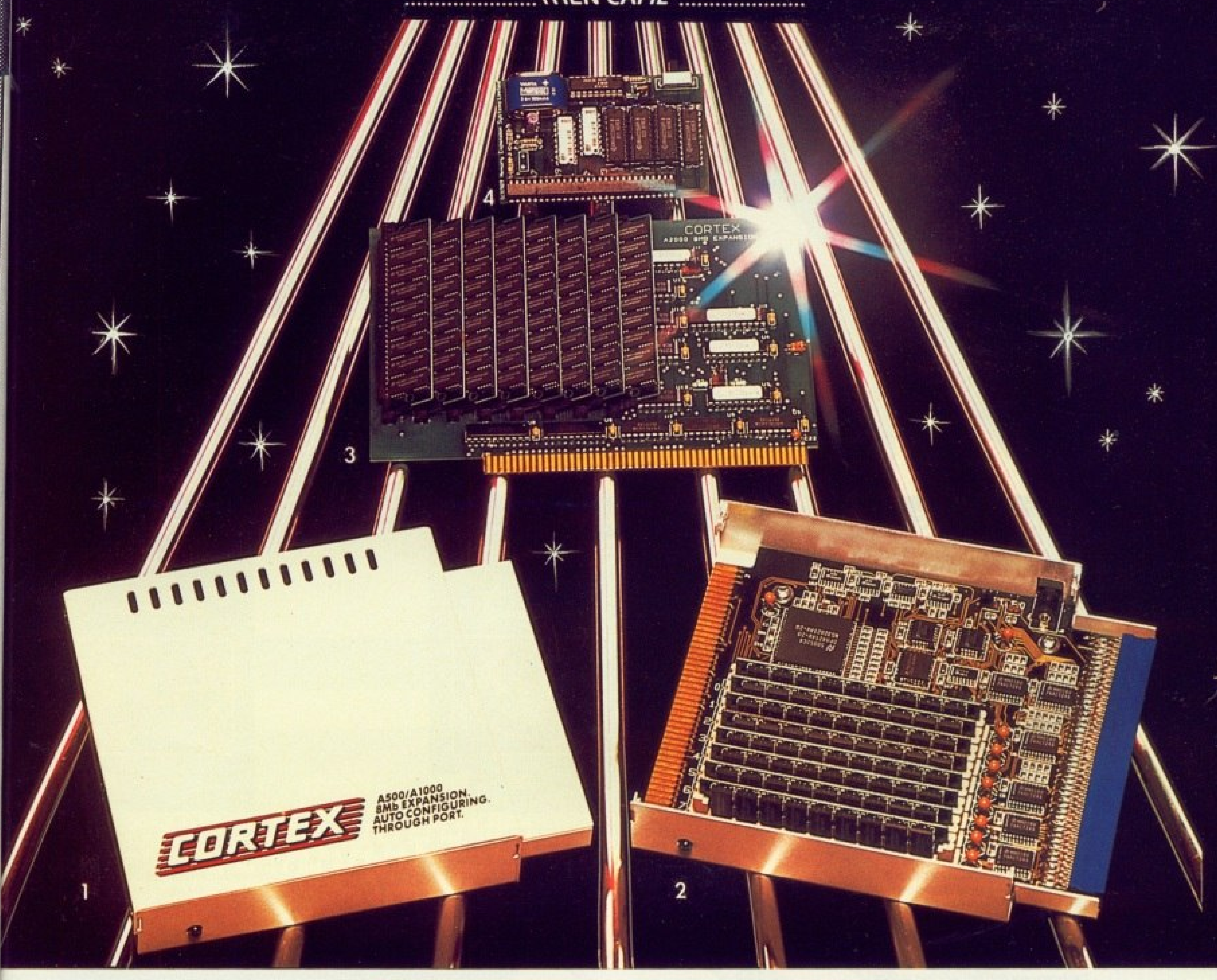
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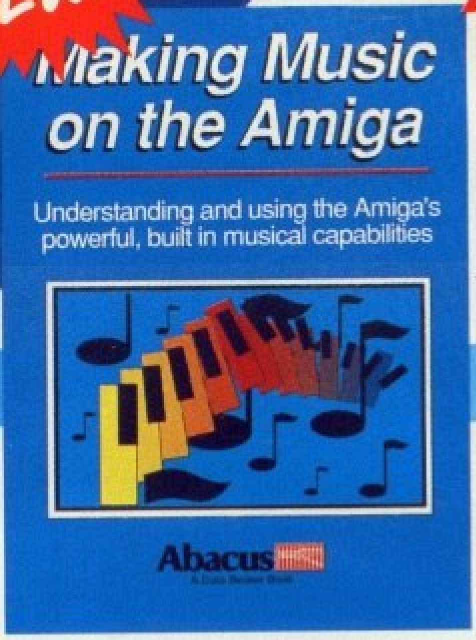
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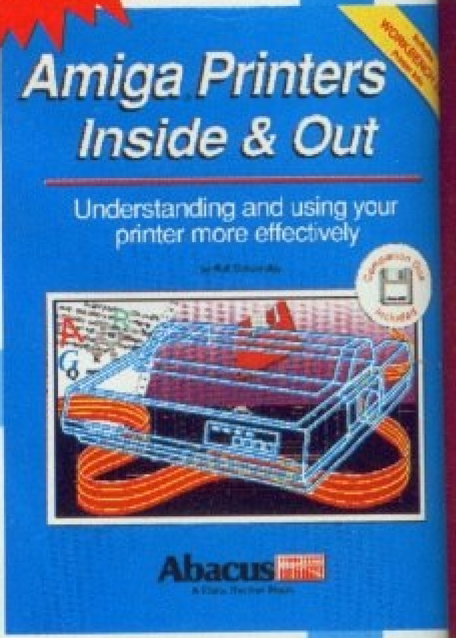
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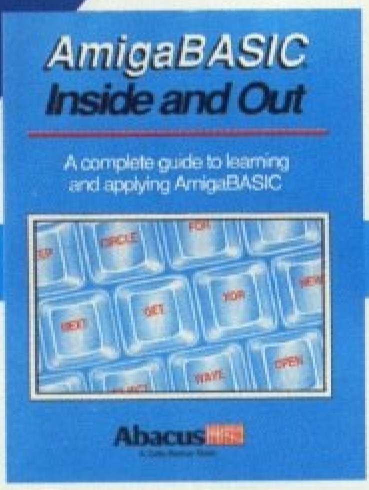


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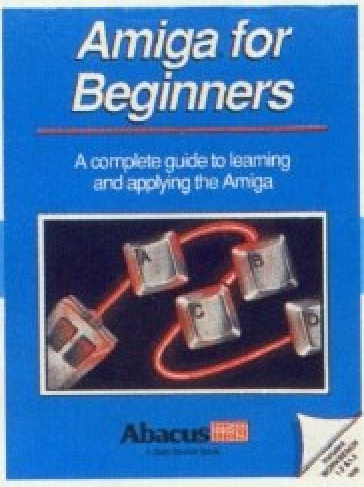
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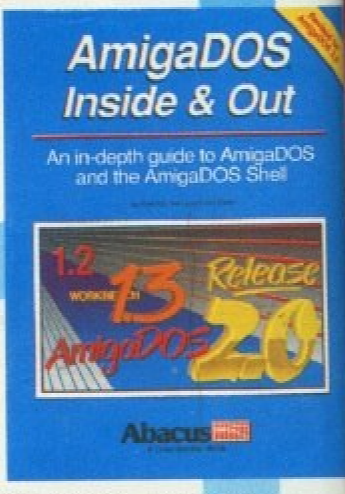
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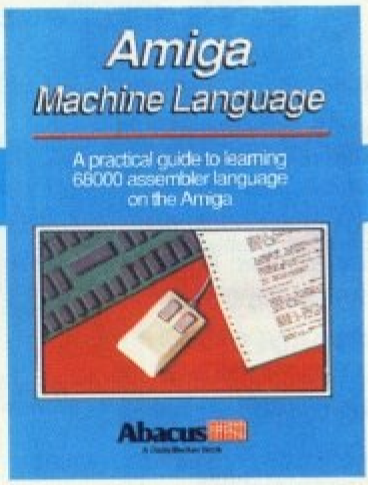


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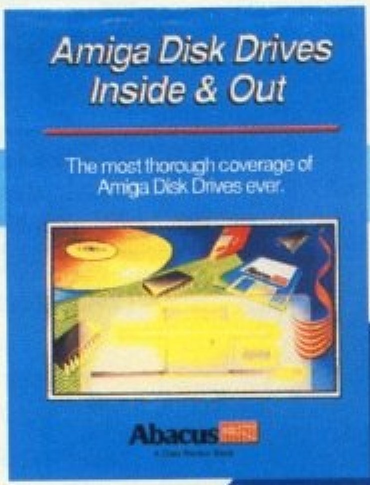


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Chill out!

An Amiga-ish aural extravaganza from the master of the mixing desks, Jason Holborn



The Amiga is a pretty stunning box of tricks. With it, you can paint pictures that would have made Van Gogh green with envy, lay out pages for a magazine, give the BBC a run for their money with your very own video productions and to top it all, it just happens to play the meanest games this side of a video arcade.

But what you may not have realised, is that the Amiga just happens to be a very capable musical tool. With the right software (and perhaps even a little extra hardware), you too could churn out music faster than Stock, Aitken and Waterman on a deadline. Don't worry if your music tastes are a bit weird, the Amiga isn't one bit fussy whether you're into Depeche Mode, Deep Purple or even Debussy.

But what really makes using a computer for music so wonderful, is that you don't need to be a Beethoven to get started. A few good ideas and a bit of basic know-how is really all you need. And once you've acquired these, there's no reason why you too, couldn't produce music on par with the kind of material that is so popular these days.

Still not convinced? You may well be shocked to learn that few of the Pop artists we regard as 'professional musicians' actually have any kind of formal musical education to speak of. What makes them able to produce chart hits is that they have a very good knowledge of the kind of music technology available to them (such as computers). Indeed, if it wasn't for computers, very few of them would be anywhere near as successful as they are today!

Obviously, if you want to storm the charts yourself, then you're going to need a bit more equipment than just your Amiga. But even so, the Amiga is still a good place to start. Unlike certain other musical computers I could name, it's perfectly possible to produce some very respectable tunes without having to lash out a penny of your hard-earned cash on expensive musical instruments such as synthesisers.

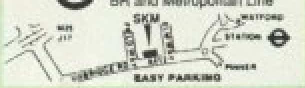
What you need to get started, is some form of music composing package. Luckily there are quite a few available commercially, so finding one that appeals to you should be no problem. However,

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before you hand over any cash, you might like to check out the PD libraries which are literally bursting with such programs, some of which could even give commercial offerings a run for their money. If you can handle the lack of documentation, then PD may be the answer.

One of the best available is NoiseTracker, a derivative of a very well known package called Sound Tracker. NoiseTracker uses an editing system very similar to a drum machine whereby songs are built-up by linking short passages of music called patterns. In turn, each pattern is defined by entering notes into any one of 64 positions for each of the four Amiga sound channels.

As you can probably appreciate, this isn't exactly the most friendly of editing systems, so you may want to look elsewhere. If you want to compose simple tunes, then there are two commercial packages that may be of more interest, Aegis' Sonix and Electronic Arts' Deluxe Music. Because both use a conventional score format for editing, they're very easy to use.

Songs are created by picking up notes and placing them down onto the on-screen stave. Unfortunately, neither is particularly powerful, but as an introduction to computer-based composition, they're worth checking out.

Fascinating area

Another fascinating area of music on the Amiga is sampling. This is a process in which real-life sounds are converted into a digital form which can be edited and replayed on your Amiga. Unfortunately, although the Amiga contains all the circuitry necessary to replay samples, you'll need to invest in a bit of extra hardware if you wish to grab your own.

One of the best samplers available is Master Sound which sells for just under £40. The sampler itself is a small rectangular box which plugs into the parallel port of your Amiga.

To sample a sound, you feed an audio signal from something like a personal stereo or CD player into the sampler, click on the appropriate icon within the sampling software and Master Sound digitises the incoming signal. The resulting sample can be cut, pasted and copied to your heart's content.

Once you move into writing music, you'll find a sampler very useful for grabbing and preparing sampled instruments.

Virtually all Amiga music packages use sampled sounds for instruments, so there's no limit to the kind of sounds you can grab and use within your own music. Failing that, the PD libraries offer a vast range of sampled instruments.

Although the Amiga enables you to produce some pretty stunning music using the built-in sound chip, sooner or later you'll realise that even Paula's four channels just aren't enough.

If you're as extravagant as I am when writing music, then you'll want all sorts of different sounds playing simultaneously – an orchestral stab here, string chords there, analogue bass, drums, a lead instrument – the list goes on. You need more sound channels.

This is where MIDI comes in. With nothing more than a £25 interface, you can connect and control a vast range of MIDI devices ranging from samplers and synths, to drum machines and even other computers – if you've got the right software, you could even connect another Amiga and use it as a 4-channel MIDI instrument!

Before you can go any further, you'll need a MIDI interface. These can be picked up for about £25, so buy the cheapest you can find. MIDI interfaces are all basically the same, so it's not really worth going for a more expensive one unless you've got some special reason for doing so.

As long as the interface offers the three basic MIDI connectors – MIDI In, MIDI Out and MIDI Thru – you can't go far wrong.

Next, you'll need some MIDI-compatible software. The first program you'll want is a MIDI sequencer. For the uninitiated, a sequencer is a program that acts as a sort of software-based multi-track tape recorder (this is what they were based upon).

Unlike a real tape recorder, however, a MIDI sequencer doesn't actually record sound. Instead, a sequencer records MIDI messages – read the box the next page for more detail.

What makes a MIDI sequencer so special is that they offer a number of distinct advantages over a conventional multi-track.

Firstly, a MIDI sequencer can handle a greater number of tracks – even the most advanced professional multi-tracks offer no more than 24 tracks, where as a program like Music-X can handle 10 times that amount – 250 to be precise.

Not only that, but as soon as music is recorded onto a multi-track, it's there to stay until the tape is erased. With a MIDI sequencer though, each track is completely separate from the rest, therefore allowing you to change any section of music at any time without effecting the rest of the piece.

Secondly, MIDI sequencers allow you to edit your music far easier. Because everything is stored as MIDI messages, which themselves are nothing more than numbers, the computer can manipulate them like any other form of information.

Sequencers are also far more accurate. You can edit a single MIDI event to a resolution of something like a hundredth of a second right up to an entire song with, perfect precision.

Until quite recently, the Amiga was poorly served with sequencers. It wasn't until the release of the Microillusions Music-X package, that music software publishers started to take the Amiga seriously. Thankfully, things have changed for the better, and

MIDI under the microscope

MIDI is really nothing more than a high speed communications protocol which is used to allow musical instruments to talk to each other.

In some ways, there's nothing musical about MIDI at all. MIDI treats your music as nothing more than a continuous stream of digital pulses which are about as musical as white noise to we humans.

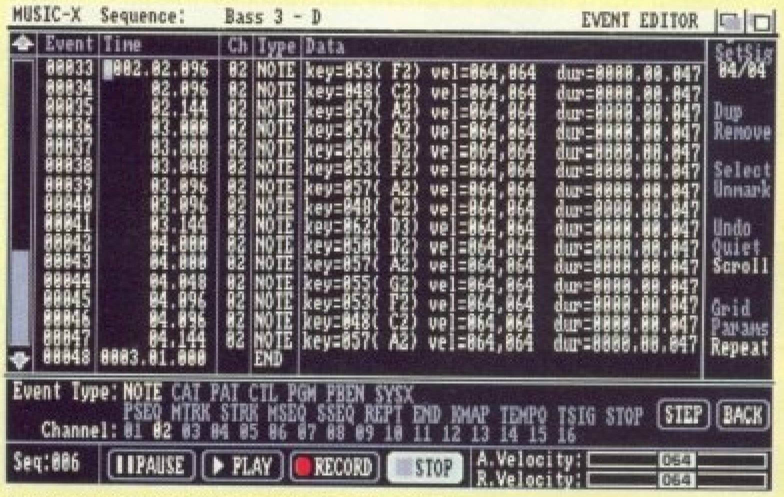
The pulses are grouped into MIDI packets (or messages) which can be decoded by devices that understand MIDI-speak. The messages themselves hold no sound data at all, they simply tell a MIDI device to carry out a particular operation.

In some ways, MIDI is a bit of a slave driver to a MIDI instrument. It continually shouts orders that the instruments obey without question. If MIDI was translated into English, it would probably sound something like this: "All instruments on channel 1 play note F4. Instruments on channel 1, stop playing F4 and play D4. Channel 1, you can stop play D4 now and start playing F4 again......" and so on.

As you can see from the example above, MIDI doesn't address instruments directly (although it can, but more on this later). Instead, MIDI uses a system of channels (16 of them, to be precise) in which each instrument is separated by 'tuning' it into its own individual channel. This way, each instrument hears only those messages that are meant for it.

Multiple MIDI channels become particularly important when more than one instrument is connected to the same MIDI network (a drum machine plus a synth, for example). If both instruments were on the same channel, they would try to play exactly the same thing, the keyboard would try to play a rhythm part and the drum machine would try to play a melody part.

With MIDI channels, you can organise instruments so that the one you want is played when you need it.



The Music-X Event Editor allows you to edit the MIDI messages that make up a piece of music



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VISA
Education Orders Welcome

there are now something like 10 different sequencing systems available.

Music-X is very powerful, yet it still manages to be one of the easiest packages to use. If you can't quite afford Music-X (at £150, it is rather pricey), then Microlllusions' Music-X Junior is just as good.

Even if you don't actually own a MIDI device, Music-X is still a worthwhile investment. Not only will it handle internal Amiga samples, but if you decide to move up to MIDI at a later date, Music-X will continue to be of use – unlike most dedicated sound chip composers.

Working with sequencers is all very well if you're bit of a loner musically, but if you want to share your music with other non-MIDI musicians, then it will have to be output to paper in conventional score format.

Unfortunately, very few Amiga sequencers can actually handle this (Pro-24, Track-24 and Tiger Cub are about the only packages I've seen), so you will have to invest in a separate package.

There are currently two scoring packages available for the Amiga, Comus' ProScore (which we still haven't seen) and Dr.T's Copyist range.

To import your sequenced songs into either, they must first be saved in MIDI File Format, which is a standard file format for MIDI data.

Most modern sequencers support both importing and exporting of performances in MIDI file format, so this shouldn't prove to be too much of a problem.

There are several different versions of Dr.T's Copyist package available. For home users, there is Copyist Apprentice, an entry level package that will output scores to preferences-supported printers.

If you buy Roland's latest music bundle, The Desktop Music Package, Apprentice is actually included as part of the package, along with Dr.T's Tiger Cub sequencer.

For those of you with access to a postscript laser printer or even a Linotronic, Dr.T also produces Copyist DTP which is a vastly more powerful program that can output manuscripts at the highest possible resolution, making it ideal for music publishing.

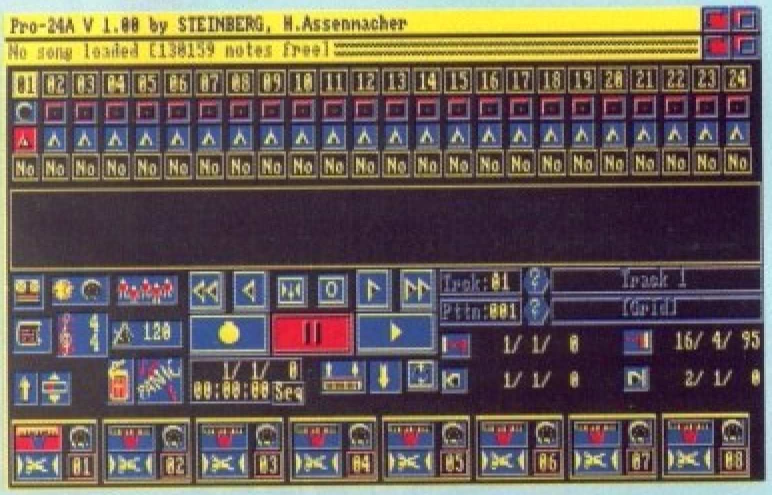
Listen closely...

Obviously no amount of sexy software and hardware will actually write your music for you. Just like the computer itself, sequencers and synthesisers are merely tools which are only as good as the person who uses them. If you think you're going to buy a synthesiser one week and hit number one in the charts the next, then you're in for bit of a shock.

A good tip is to sit down and listen closely to as much music as you can. If possible, concentrate on different aspects of the music, rhythm patterns, bass lines and so on, and try to copy them on your Amiga.

Once you've got a pretty good understanding of how other people's music is structured, you can start experimenting with your own material. While analyzing other music is a good idea, don't restrict yourself to one particular style. Try to listen to as many different styles as possible, paying as much attention to each.

Well there we have it, desktop music in a nutshell. Whether you're tinkering with NoiseTracker or getting down to some serious sequencing with Music-X, music on the Amiga will prove to be a fascinating and often rewarding pastime – even if you don't make it to the top ten!



CHOOSING A SEQUENCER

With so many sequencers available, choosing the one that is right for you is an almost impossible task. However, if you follow the guidelines listed below, then you won't go far wrong.

- **RECORDING** Make sure that the sequencer you choose supports both step-time and real-time recording from MIDI. Step-time can be particularly useful when building up rhythm parts, where as real-time is used for recording sequences 'live'.

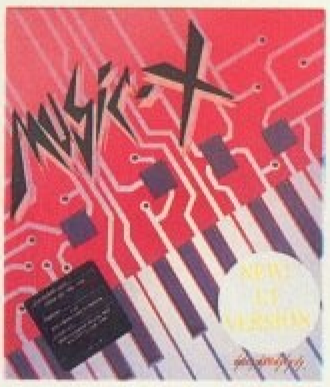
  It's also useful to be able to record several MIDI channels simultaneously, so that you can import performances from other sequencers easily.

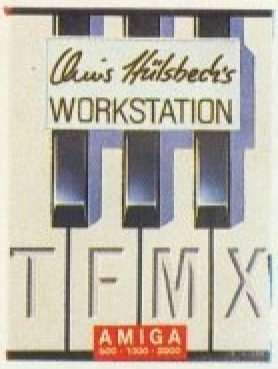
- **TRACK CONTROL** Most sequencers offer at least 12 tracks of recording, but you really need at least 24. Generally, the more tracks you have available to you, the more room you've got for experimenting with different bass lines and so on.

  Check to make sure you can merge tracks, copy and move them about and extract different types of MIDI event from one track and store them in another. You may not find it useful to start with, but you'll thank yourself for being so wise once you get down to some serious sequencing.

- **EDITING** No one can play perfectly first time, so choose a sequencer that allows you to edit sequences both in a graphical form (either as a piano role bar display, or in a more conventional score format) and as numeric MIDI data. Editing MIDI data in numeric format allows for greater precision.
- **SONG CREATION** You could just record a song straight in, but it's much easier if your sequencer includes tools to allow songs to be built up from sequences arranged as patterns. Preferably, go for a song creation system that is graphics-based.
- **MIDI MANIPULATION** It's always nice to have some kind of control over the MIDI data flowing through your set-up. Make sure that you can specify which channel a particular sequence is to be played on, filter out different types of MIDI event (for example, filtering out after touch messages can save a lot of memory) and channelise incoming MIDI data (send the incoming data for one channel straight out to another).
- **SOUND CHIP SUPPORT** As we discussed earlier, the Amiga is capable of producing some pretty decent sounds itself, so it's well worth making sure that your sequencer can handle internal sounds.







PD SCENE

If your budget is tight then the PD libraries are a good place to look for music software. Most are Sound Tracker derivatives, but there's also a vast range of MIDI software just waiting to be picked up and used. Here's a quick run down of some of the best currently available.

- **NOISETRACKER:** 2.1 (17bit #778). As far as Sound Tracker clones go, this is the biz. It includes all the usual options, but also has a sampler/sample editor built-in, plus a fairly simple support for MIDI. Definitely worth checking out.
- **MED 2.13**. Another Sound Tracker clone with MIDI support. Those of you who bought the December issue of *Amiga Computing* already have this. It's on the cover disk!
- **CZED (Fish).** A complete patch editor and librarian for the Casio CZ range of synths. A similar commercial offering would set you back £100, but this one's free!
- **MIDI Library (Fish)**. A complete programmer's library for writing MIDI applications in anything from assembler to AmigaBASIC. Also includes some handy MIDI utilities that demonstrate the power of the library.



Note the digital clock display shown here within Music-X.

SEQUENCERS: HOW THEY WORK

Unlike a tape recorder which merely replays an audio 'image' of your music, a bit like a sampler, a sequencer actually recreates it by playing each individual note again through MIDI.

The process is achieved using a very fast clock which times each incoming MIDI event. As a result, the computer then knows exactly when you pressed a particular key.

This clock reading is stored in memory along with the note itself. To a computer, your musical masterpiece is, therefore, nothing more than a long list of notes along with the exact time that each was played.

To actually play the music back to you, the computer resets its clock and starts it running again. As soon as the clock reaches the same position that a particular event was recorded (although this can be changed via editing) the computer sends that event out through the MIDI port reproducing your music perfectly.

MIDI MATTERS

The most obvious reason for buying a MIDI device is to increase the number of sounds that can be played simultaneously. But there's another good reason - sound quality. Like it or not, the Amiga's humble sound chip is pretty naff when compared to the kind of sonic delights produced by top of the range kit such as the Korg T3, Yamaha SY77 and Akai S1100.

MIDI devices come in all shapes and sizes, but the first MIDI device you should buy is undoubtedly a MIDI-compatible keyboard. Even if you're not a keyboard whizz, a MIDI keyboard will give you far greater control when writing your own music.

Keyboards aren't as unfriendly as some people seem to think. Once you've learnt where all the notes are, it's just a matter of sitting down and experimenting to see which sound good together – that's how I learnt to play!

A word of warning though. Don't just dive in and buy the first keyboard you see, you could end up with a turkey. It's very important to make sure that you get the best keyboard you can.

I use a Korg M1 (approx £1500), but there are much cheaper keyboards available with similar features. Here's what to look out for:

- **MULTI-TIMBRAL:** Put simply, a multi-timbral keyboard can generate several different sounds simultaneously on different MIDI channels. For example, a single multi-timbral keyboard could use a piano sound on MIDI channel 1, a guitar sound on channel 2, bass on channel 3 and so forth.
- **POLYPHONY:** If you've bought a multi-timbral keyboard, then make sure that it can actually make decent use of this feature. Go for a keyboard which offers at least 16-note polyphony, if not more.
- **KEYBOARD:** If you can, go for a keyboard with full size keys. Quite a few cheaper MIDI keyboards use mini-keys, which are very hard to play. Starting off with a full size keyboard will make moving up to professional music gear so much easier.

Quite a few keyboards are also velocity sensitive – they respond to your touch – which is great for adding expression to your music. In practice, however, such a feature isn't particularly useful to most beginners, so don't worry if your keyboard doesn't have it, although it's become a standard feature on most modern budget keyboards. Even less useful for beginners is Aftertouch, which serves only to eat large chunks of your sequencer's RAM.

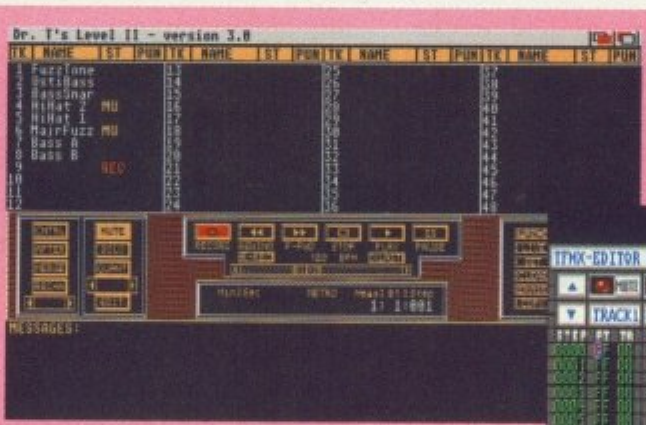
- **DRUMS:** Quite a few multi-timbral keyboards also offer drum sounds. These are usually of very high quality (they're 16-bit samples usually), so they're a better bet than using internal Amiga samples. Buying a keyboard with drum sounds could even save you the expense of a drum machine.



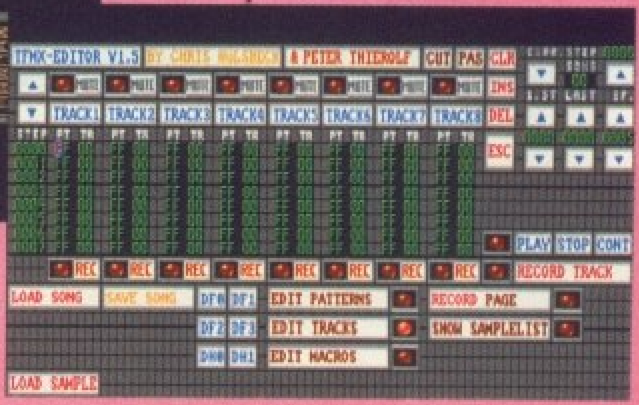
The Korg M1. If you can afford it, this is one of the best MIDI keyboards available.


Cat and Mouse
Sometimes the
SO WHEN ITS LIFE OR DEATH
Situation Allows
CONFLICT ON YOUR COMPUTER GAME
No Second
YOU CAN RELY ON CONTRIVER!
Chances . . .
BREEDER OF SMART MICE!
By
CONTRIVER
europe ltd

MUSIC SOFTWARE



Master Tracks



Master Sound

So you've got the hardware, now all you need is some decent software. Here's a quick run down of my current musical faves.

SOUND CHIP SEQUENCING

- Quartet. Not the most powerful program of its type, but very easy to use. Notes are represented on a sort of stave-like grid. Also includes a freely distributable player program.
- TFMX. Powerful but very unfriendly package aimed at games programmers. Probably not the best bet for beginners.
- Music-X Junior. Not quite as friendly at first, but very powerful. Not only that, but if you move on into MIDI, then Music-X Junior will continue to be of use.
- Aegis Sonix. Very simple score-based music program. Least powerful of all the packages mentioned, but very easy to use.
- Deluxe Music. Comprehensive sound-chip scoring package. Also includes a little MIDI support. Starting to show its age though.

BUDGET MIDI SEQUENCING

- Music-X Junior. Mentioned above, but Junior is also a damned good MIDI sequencer. Offers 250 tracks of real-time MIDI recording, full graphic editing, the works.
- Trax. Cut down version of the industry standard Master Tracks Pro. Trax is a fine program that offers virtually the same facilities as Music-X Junior, if not slightly more. Only let down by the fact that it does not support internal Amiga samples.
- Tiger Cub. 12-Track MIDI sequencer with full graphic sequence editing and scoring facilities. Includes full support for Amiga samples, but is rather expensive for what it offers.

PROFESSIONAL SEQUENCING

- Music-X. As far as MIDI sequencing goes, Music-X is the biz! It's got virtually everything that a musician could ask for. Highly recommended.
- Master Tracks Pro. An industry standard sequencer that failed to inspire on the Amiga. Gives Music-X a good run for its money and wins in some departments. Can be rather slow and cumbersome at times.
- Pro-24. Another industry standard, but a naff one this time. Pro-24 is years old on other machines, so it isn't really worth bothering with unless you use a recording studio which has Pro-24 running.
- KCS 3.0. Dr.T's acclaimed sequencer. Very powerful, but very unfriendly – it doesn't even offer graphic editing of sequences. Definitely one for the pros only.

SAMPLING

- Master Sound. Very cheap, but very good. Produces some of the clearest samples I've ever heard from an Amiga! Definitely one to check out.
- Audio Engineer. The best sampler for the Amiga, but very expensive. If money is no object, then this is the one to go for. Also includes the best sample editing software yet produced for the Amiga – AudioMaster III.
- Sound Trap III. Another cheap but very good sampler. Sound quality is on par with Master Sound, but it's let down by poor software.

VOICING

- Sound Quest Editors. Dr.T is about the only company that produces a comprehensive range of editors for different synths. Those covered include the M1, DX7, CZ series, SY77 et al.

VOICING SOFTWARE

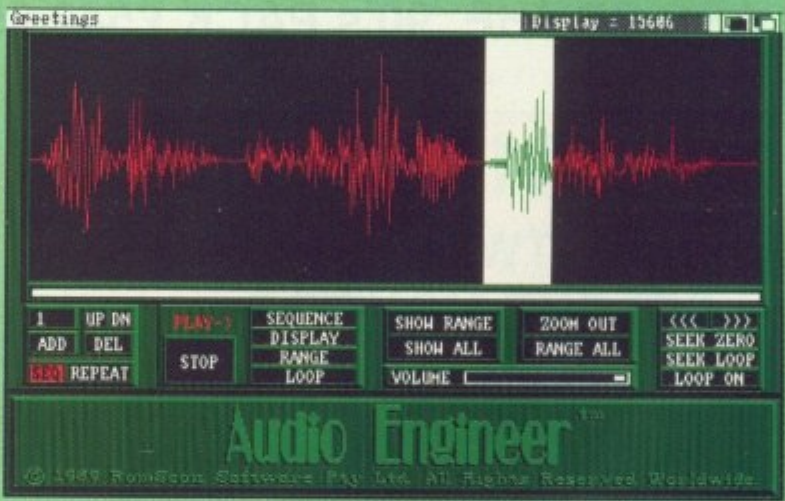
Programming a synthesiser or sound module is a difficult enough task at the best of times, but things are made even worse by the fact that most offer little more than a tiny LCD strip and a couple of buttons to work with. If you've ever tried programming a synth, then you'll know already how unfriendly they can be. With your Amiga, however, programming a synth becomes so much easier. Many companies produce programs called Patch Editors, which allow you to edit the sounds within a synthesiser on your Amiga screen. And because the Amiga display is so much more flexible than an LCD strip, a patch editor allows you to see your sound in a graphical form, thereby making the process of editing far more understandable and productive.

Obviously all synthesisers aren't the same, so it goes without saying that you need a patch editor designed specifically for your synthesiser. If you've got a fairly popular synth, then finding a patch editor shouldn't prove to be too much of a problem.

Sound Quest (Dr.T) produces a vast range, which covers the majority of popular synths including the Casio CZ range, the Kawai K1, Korg M1, Yamaha DX and SY synths, Roland D-series and the like. These retail for about £100 each.

Music-X also has a number of patch editors included free of charge, so if you're after a professional sequencer and just happen to own one of the synths that it supports, Music-X should be the first program on your shopping list.

The current release of Music-X has patch editors for the Yamaha TX81Z, DX21/100 and the Roland D50. Microillusions promised us extra editors for just £10, but none have yet arrived – Korg M1, Roland D10/110 and Kawai K1 editors are supposedly in production.



Dr.T's Patch Editor for the Roland D. 50

THE AMIGA COMPUTING DISK

Another corking 3.5 incher stuffed to the gills with searingly hot software!

Videocat

Adrian Gate has written Videocat, a program designed to catalogue your collection of video tapes and organise them to show any unwanted or free spaces which are available for recording.

The information that the system records is at two levels. Tape Data relates to the type of tape used for the recording and Programme Data, which lists the programmes and their positions on the tape.

When you run the program the screen displays an empty entry for a tape and three empty spaces for the programmes on that tape. There are also two sliders. The thin one on the left is for scanning through the tapes and the thick one on the right is for scanning through the programmes when there are more than three on a tape.

There are four menus to control the system. The Files menu provides:

LOAD:

This clears all current entries from memory and loads the file named at the bottom of the screen (defaults to "CATALOGUE").

SAVE:

Saves the current set of entries to the file named at the bottom of the screen.

SELECT FILENAME:

This activates the file requester, which tries to access the file named at the bottom of the screen. If you want to change the filename, use the requester buttons and/or gadgets in the normal way to enter the relevant device or directory, and type the new name into the string gadget.

PRINT:

This is a sub-menu with two options to print the current tape, or all the tapes. Once one of these options is activated a requester is displayed for you to select the page size and output quality. You may cancel the operation from here if you want.



Remember that for Print to work you must have Preferences set up to load the correct printer driver (from DEVS:printers). Bear in mind that if your printer doesn't support NLQ, selecting this option will probably result in garbage output.

ABOUT:

This will display a message about Videocat.

Tapes menu

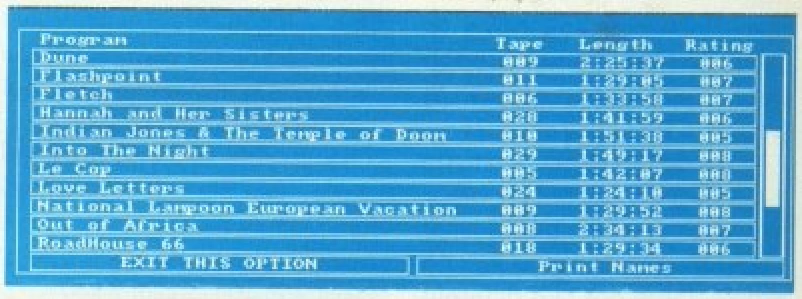
The Tapes menu has the option to Add, Remove and Amend tapes. When a tape is created a blank area entry is initialised in the programme list for the space on the tape.

If you delete a tape, all the programmes are deleted automatically and a user confirmation requester is displayed. For tape data entry a special dialogue box is used. When a tape is being amended it is not possible to change the tape number.

Programmes menu

This menu has options to Add, Remove and Amend the selected programme. Simply click to select. A box is displayed to the right of the programme.

The Add option does not require you to select a programme as it creates a new one. It displays a dialogue box for you to enter the details and then insert the programme into the programme list. The previous entries covering that area of the tape are removed or cut up to show the actual contents of the tape. You can delete them afterwards if necessary.



Note that the Amend option does not let you alter the start and end positions of a programme. You cannot amend or delete programmes marked as blank. When a programme is deleted it is marked as blank and merged with any adjacent blank area. Any blank area shorter than five minutes is not displayed so as to reduce the need for using the programme information slider.



Lists menu

There are two list-creating options to simplify the data display. List Blank Areas enables you to select a rating – a personal score you give to programmes which reflects whether you want to keep them or record over them – and then extract all programmes and blank areas at or below this rating.

They will be built up into blocks where adjacent, and lengths are calculated. The list is sorted into length order and displayed in a requester. You can scroll the list using a slider or print to the selected printer.

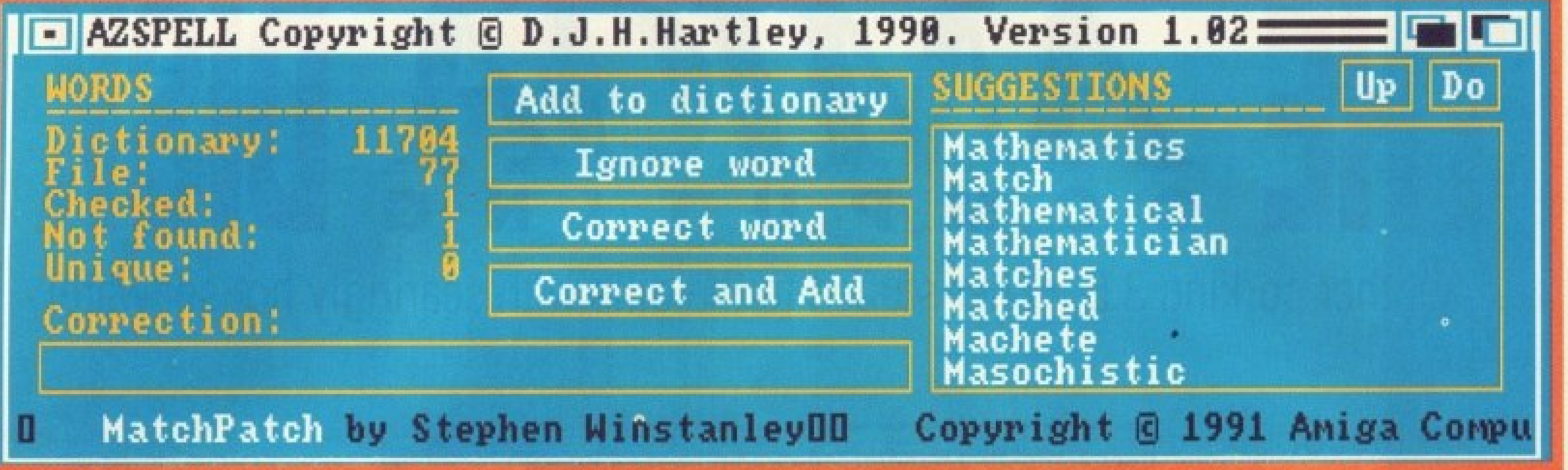
List Programme Names extracts all the programmes from the list of tapes and sorts them into alphabetic order. It then displays them within a requester with a slider to move the list. Again, there's a print option.

Word to the wise...

Videocat uses two disk-based fonts, Diamond/20 and Ruby/12. These must be present in FONTS: along with diamond.font and ruby.font for the program to work correctly. These files are in the fonts directory on the cover disk, so if you boot from the cover disk Videocat will work fine.

If you're not booting from the cover disk and you need to add Diamond/20 and/or Ruby/12 to your FONTS: directory, remember to use FixFonts to update the .font files before running Videocat.

Videocat was written by Adrian David Gate using Benchmark Modula 2. It's freely distributable so long as money does not change hands.



AZspell 1.02

AZspell is a quick-and-easy spell checker for ASCII text files. It comes with a dictionary of almost 12,000 words and facilities to store as many more as you like.

To run AZspell you should first double-click on the AZassign icon. This assigns the logical device AZspell: to the current directory, that is the directory AZassign is in when you double-click it. Note that if the disk containing the dictionary is called AZspell, and the dictionary is in the root directory of that disk, there is no need to run AZassign first. After double-clicking on the AZspell icon you'll be presented with a string gadget in which you should type the name of the file you want to spell check. You'll probably need to supply the full path to the file. For example, if you wanted to spell check the MatchPatch.DOC file on the cover disk, because it's the only ASCII file on it, you would enter:

CD016:matchpatch/matchpatch.doc.

After a very short wait the main AZspell window will appear. If you've followed the above example, the word 'MatchPatch' will be highlighted in white at bottom left. AZspell is saying it doesn't know that word and is asking you what you want to do about it. On the right-hand side is a list of suggestions for the correct spelling.

At this point you can choose to add the word 'MatchPatch' to the dictionary, ignore it, correct the spelling or correct the spelling and add the word to the dictionary.

Click on the close gadget at any time to close down the spell checker. AZspell has a special mode of operation which allows the automatic collection or addition to the dictionary of misspelled and unfound words in a text file. This mode is launched via the CLI. Full details of this and all the other features of AZspell and its associated programs are in the AZspell.DOC file.

If you want to move the program to another disk, simply drag the AZSPELL102 drawer icon into the new disk's window.

AZspell V1.02 was written by Danny Hartley. AZspell and AZmerge can be used and distributed freely, but they are not public domain. AZdictionary is supplied 'as is' for public domain, and may be modified and redistributed in a modified form.

MatchPatch

MatchPatch is a 24 level platform game in which you have to destroy all the aliens on each level, or get to a bonus screen to progress to the next level.

To prevent you from achieving this goal there are deadly aliens that kill on contact, plus a timer which will take one of your lives if it expires. There are five different aliens to overcome, all with individual characteristics.

The stone men walk slowly around the platforms, moving from the top to the bottom of the screen. Icebergs on the other hand, can jump up to higher platforms suddenly, as can the fire balls, which move around very quickly.

Watch out for storm clouds – electricity – which can change direction just when you think you're safe, and the light bulbs which bounce off the platforms at an angle.

Which aliens will be on which screen and their order is shown at the top left of the display. This order is important because it controls the types of bullet you can fire. An arrow under the order of the aliens at the top left of the display indicates which type of alien your bullets will kill.

If the arrow is under the iceberg alien for example, this is the only type you can kill. Any other aliens you hit will be transformed into the next alien in that level's order, but not to the type you can kill.

To enable you to kill all the aliens there are holes in the bottom platforms. Over the holes are arrows that indicate which type of bullet you can collect if you jump down the hole.

Jump down the hole with the Fire button pressed and not only do you collect the indicated type of bullet but you also cycle the arrow over the hole to the next bullet in the level's order. After jumping down the hole you'll appear at the top of the screen, so look before you leap!

As you'd expect, the aliens can jump down the holes as well. After doing so, they'll be transformed into the type of alien indicated by the arrow. To help or hinder, there are various bonuses to collect. Cakes get you an extra life and the glass boosts your fire range. Moving over the clock stops the clock and if you get the egg timer, you'll win extra time.

The coin is a score bonus, the bomb kills all the aliens on the screen, and the tap drowns all the fire balls. An on/off switch gives you mega bullets that keep going after killing an alien. But watch out for the herbs, they're deadly!

If you collect the flower bonus you will go to a maze level where you must reach the exit at the bottom of the screen before the timer expires. Succeed and you get extra points. You then go to the next level of the main game.

There are 16 maze levels and movement between them is controlled by a joystick in port 2, left and right to run left and right, up to jump up, fire to shoot bullets. At any time during the game the left mouse button will pause the game and the right mouse button will restart. To start the game after loading, press fire.

At the end of the game, if your score is high enough, you will be able to enter your name in the high score table. The whole program loads into memory so the disk can be removed after loading. Don't worry about the disk drive light staying on, it's just a bit of sloppy programming.

Hints

After dying, you'll be invulnerable until the timer restarts. On the title screen hold the joystick right then press the fire button for a extra life every 10,000 points, instead of the usual 20,000 points. Again on the title screen, hold the joystick left then press the fire button to start on Level 10.

If the timer is getting low on a level and there are a lot of aliens left, use the bonuses if possible. The flower bonus ends the current level without loss of life even if you do not complete the maze.

Try to set all the arrows the same. This limits the types of alien on a level, making it easier to kill them.

Find a safe platform area where you can shoot the aliens as they run by. The on/off switch bonus lets your bullet pass through an alien after it has been hit, allowing you to shoot more than one at a time.

On the maze levels, time is limited, so start to run immediately and work out your route on the move. Failing to do this will probably mean no extra points.

MatchPatch was written in assembly language (Devpac 2) by Stephen Winstanley. It may be offered for download on bulletin boards provided it is made available as a free download.

Grammar 1.5

When we first came across this program we assumed it was a joke. Programs to check English grammar are almost as difficult to write as programs to correctly check context. It's something artificial intelligence boffins have been working on for a long time.

So we were more than a little surprised to run a text file through



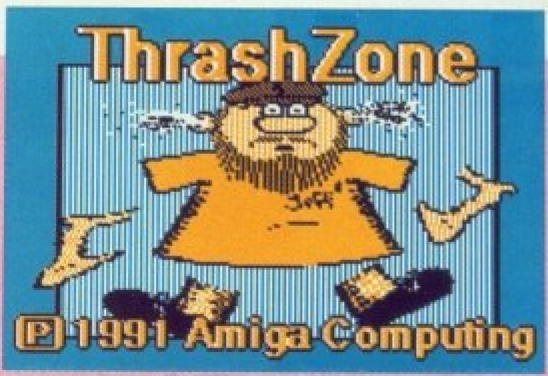
Grammar and be told we had split an infinite in line 12 of our text file (the second sentence of this article, we've left it there, see if you can spot it).

Grammar checks for a number of other common pitfalls. There's an alleged rule that forbids the placing of the preposition at the end of a clause or sentence. For example, in the sentence 'She was easy to talk to', the word 'to' is the preposition. Grammar spots this and tells you about it.

This kind of grammatical mistake is usually solved by moving the preposition to an earlier place in the sentence. In this particular example it is impossible to do that, which is why we say the preposition rule is a alleged one. (The point is that the sentence is dreadful anyway. Why not simply say: 'Talking to her was easy'? The rule should not be thought of as being alleged, it's valid – Ed).

Double negatives are checked for, although we couldn't get Grammar to complain about the phrase: "I don't know nothing about it". If you're in the habit of starting sentences with the words 'and' and 'but', Grammar reports back on every occurrence. Some words are very badly over-used and almost always unnecessary to the very meaning of a sentence. The best example is the word 'very'. In 99.9 per cent of cases you can remove very from a sentence without changing the meaning. Grammar will tell you about your use of the word 'that' if you supply the -t option on the command line: grammar -t <filename>.

If you want to find out how Grammar works, study the source code. The program is by no means infallible, so you might be able to improve or expand it. The source has been crunched with PowerPacker. Grammar V1.5 was written by Rudolph P. Sarna and the Amiga port is by T. C. Sarna.



ThrashZone

We've had all styles of music on the disk recently, but nothing approaching heavy rock. Now Keith Berry has sampled some great electric guitar sounds and put ThrashZone together.

Keith originally sequenced it with Soundtracker 2.4, but we've converted it to MED V2.13 format (December 1990 cover disk) so you can easily save out the samples if you want to re-use them. Like all heavy rock music, it sounds best at top volume with a bit of distortion – ZZ Top eat your hearts out!

Turtle

Turtle is a tiny but powerful logo-like language, written by Alan Smith of Norwich, for generating turtle and fractal graphics. It uses an imaginary turtle whose position is the current drawing position.

The position may be from 0,0 (top left) to 640,512 (bottom right). The turtle also has a heading from 0 to 360, which is the direction in which the turtle faces - north (straight up) is a heading of zero, east is 90, south is 180, west is 270.

The program takes an input string and produces a drawing depending on the characters in the string. Several parameters are needed by the program to do its drawing.

These are specified in control statements, starting with a hash character:

#setpen(N): Set foreground pen colour to N.

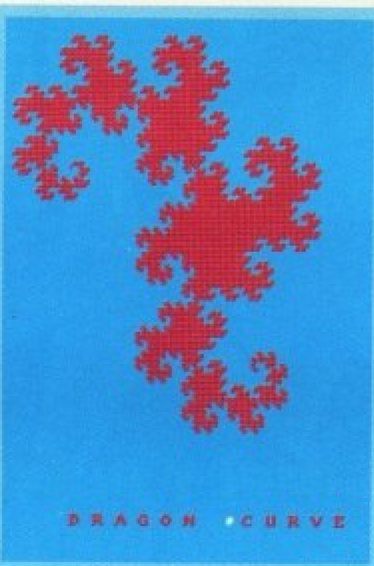
#cls(N): Clear screen to colour N.

#move(X,Y): Move the turtle to screen position (X,Y).

#set_heading(N): Set turtle heading to N degrees.

#set_angle(N): Set the angle through which the turtle turns when it turns left or right (-ve or +ve).

#set_level: Set the number of expansions which will be applied to the initial run string.



#set_length(N): Set the distance the turtle will move forward for each F (forward) instruction.

#text("STRING"): Output the text enclosed in double quotes at the current cursor position.

#run(STRING): Start drawing, using STRING as the initial string. The string is not enclosed in quotes. For example: #run(F) will produce a straight line, and #run(F+F+F) after a #set_angle(120) will draw a triangle.

To get an idea of what Turtle can do, double-click on the Demo icon in the TURTLE drawer then sit back and watch. When the demo has finished, select Run File from the Files menu, type in 'tutorial' and hit Return.

Full details of the program and how to use it can be found in the Turtle.HELP file. Either double-click on its icon or select Project/Help from within Turtle itself.

Take particular notice of the Productions and String Expansion sections, these are the driving forces behind the language.

```
#cls(6)
#move(320,485)
#setpen(4)
#set_heading(0)
#set_length(8)
#set_level(10)
#set_angle(18) S=(+++G)(—-G)TS
G=+H(-G)L H=-G(+H)L T=TL L=(-FFF)(+FFF)F
#run(SLFFF)
#wait(30)
```

This life-like bit of greenery is produced by a single command: #run(SLFFF). Notice how the strings G, H, L and T all end up being part of the string S. Mess around with the #set_heading and #set_angle arguments to get different effects. Here's another program

```
#cls(6)
#move(200,485)
#setpen(7)
#text("D R A G O N  C U R V E")
#move(200,256)
#set_heading(270)
#set_angle(90)
#set_length(2)
#set_level(13) F= X= X+YF+ Y= -FX-Y
#run(X)
#wait(30)
```

Reduce the #set_level argument to get a closer look at how this dragon curve is constructed.

LoveHearts

LoveHearts was written by Philip Barrett and places four heart-shaped, animated VSprites on the workbench screen, especially for St Valentine's Day.

The sprites drift around but always home in on the mouse pointer. They can't move off the edge of the workbench screen and will disappear if another screen is pulled up to completely cover it. After running the program, a bar with a close gadget appears. Clicking on this close gadget ends the program, making the hearts disappear.

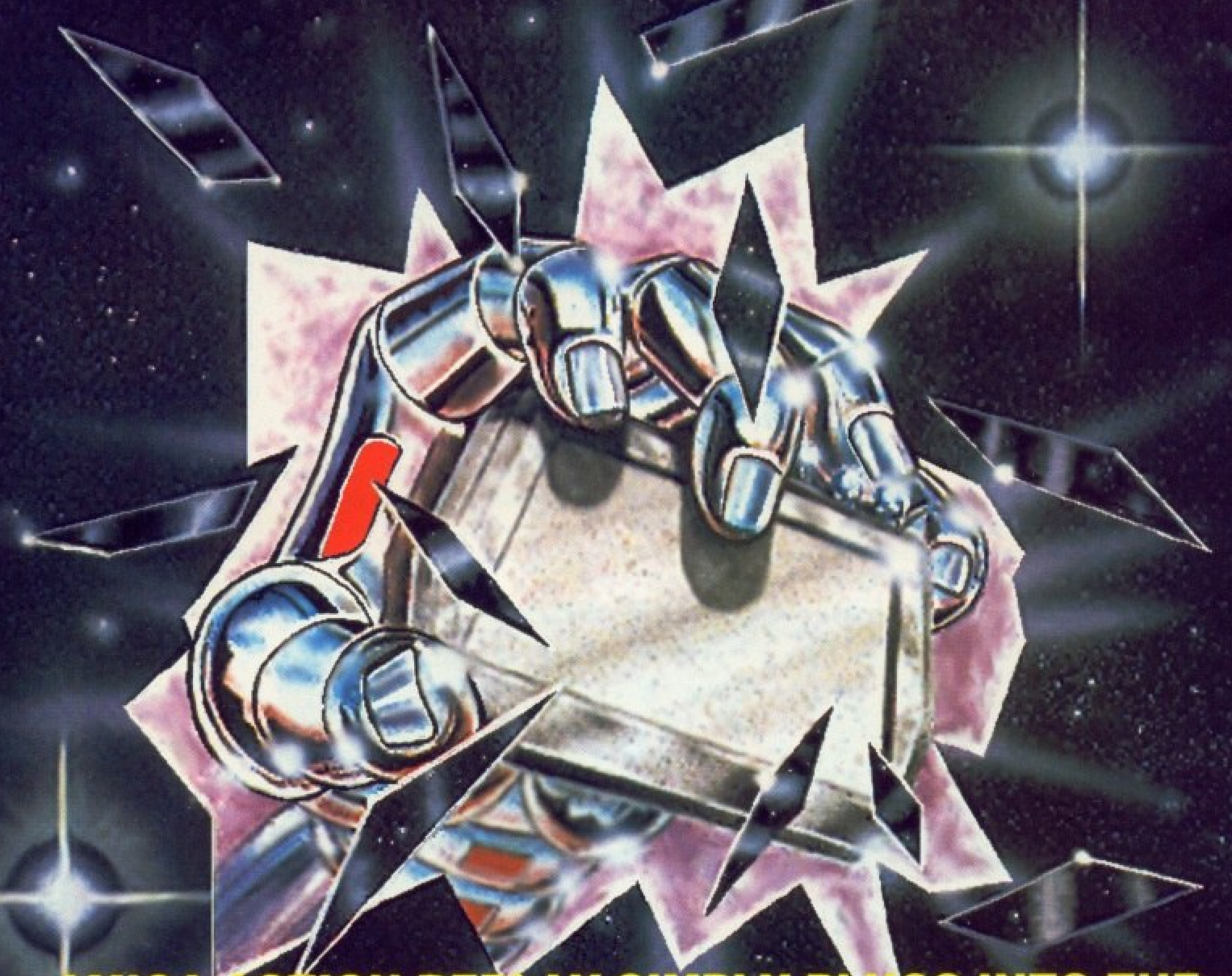
It's not advisable to run more than one copy of LoveHearts because to do so may cause a guru. Running it at the same time as any other program which uses VSprites may well give the same result.

We certainly can't predict what the gels system will do if it is assailed by requests for VSprites from several sources!

LoveHearts will run in conjunction with other workbench programs but the hearts tend to pause during disk access and menu selection This is unavoidable if you want the workbench to run at a reasonable speed.

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Subbuteo...The computer game

Publisher: **Electronic Zoo**
Price: **£24.99**

The game's strength is also it's weakness. It slavishly replicates the original sticking grimly to the rules of FISA – Subbuteo's ruling body.

Real aficionados will no doubt be totally happy with this attention to detail. But beginners may be in for a surprise concerning the degree of seriousness with which the game is taken.

The graphics are generally very good, sporting a sweeping 360 degree view of the pitch, not dissimilar to that used in most pool or snooker simulations. Optional team colours are available, plus the ability to zoom in and out of action as required.

Game control takes the form of flicking your figure's base with a large digital digit that scrolls back and forth behind the player.

Simply hit the fire button to select the flicking position and once more to select the strength. Your animated plastic counterpart should then make a perfect play.

Even swerves and trick shots are possible with a little practice.

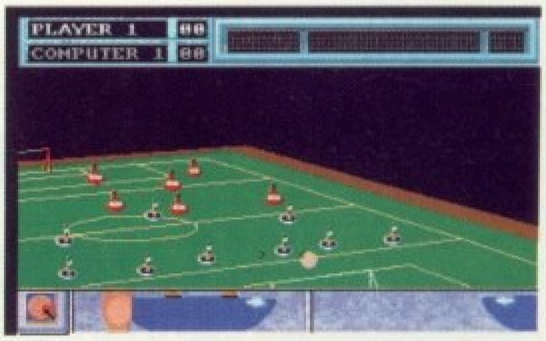
The main complaint levelled by experts concerns the lack of speed with which the game is played. Indeed, in comparison the real game it's painfully slow. On the other hand, you don't have to spend the entire day picking up the ball up from dining room floor.

And of course you won't need to pack everything away before putting the dinner out.

Basically, if you were a fan of the tabletop game you may well be interested in this computer version. If you hated the original the same will probably apply to its latest descendant. The choice is yours.







International Soccer Challenge

Publisher: **Microprose**
Price: **£24.99**

A quick glance at the pictures on this page will no doubt make the exchange of your hard earned cash for the software displayed seem quite reasonable.

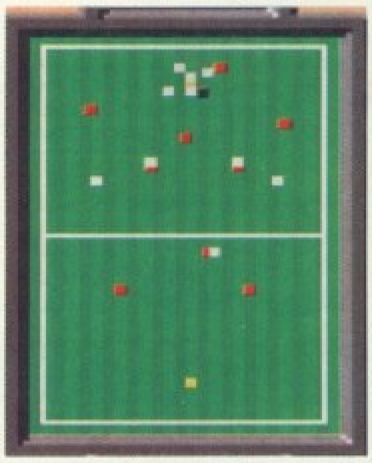
But wait, you impetuous fools you! Put those wallets away until I've finished. A few things need explaining.

As far graphics and general presentation goes, ISC is great. The figures are animated convincingly, although a little slow on occasions. The option screens are full of alternatives for practice, league variations and even the World Cup.

The problems only really appear when you start to play the game. As with most of the football simulations the gameplay is simply not in the same league as Kick Off.

Even ignoring the presence of the Anco classic in the market, ISC is still rather pedestrian, with runs from one end of the pitch to other the norm rather than a cause for excitement.

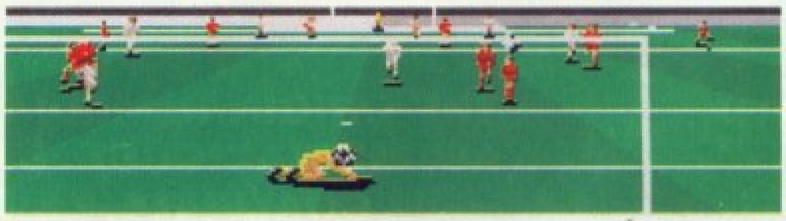
Corners, throw-ins and set pieces are all there. Even the ref, with his attendant linesmen make an occasional appearance – which incidently makes a pleasant change from playing the game. The sound might just make the fourth division, with only the bare minimum of sounds popping up from the depths of dearest Paula, the singing dancing sound chip. There has been an attempt at some background music, but given the choice between that, and four hours of Kyle I know which I'd go for.



Let's face it, the game simply isn't very good. If you are a real football fan, and Amiga maniac to boot, it may be worth your while.

If, however, you are after real value for money it will probably be worth looking elsewhere.







Not a good start - that`s my `ghost` flying away to the left!



Second floor - haberdashery , menswear, and homicide . . .

STRIDER 2

Publisher: **U.S. Gold** Price: **£24.99**

U.S. Gold have done it again with another action-packed coin-op conversion. The follow up to smash hit Strider, one of last year's biggest sensations, looks set to enjoy even more success. Packed as it is with enough shooting, killing, and mindless destruction to keep the most hardened joystick waggler happy for many a long hour.

The scenario, for what it matters, is simple. You've just finished off the Reds from Strider 1 and are looking forward to a well-earned rest when your services are urgently requested by the planet Magenta.

Their leader has been captured by alien terrorists and the Magentans are so desperate to get her back that they will agree to equip you with a measly Gyro laser and send you out alone to face the hordes. Smacks of conspiracy, that.

Armed with your trusty, well notched sword and the new gun, you stride (geddit?) boldly forth to fight your way through five levels of murder and mayhem, and let me assure you, this game is murderous.

It takes about 30 seconds to realise just how homicidal things can get, and after that you spend the remainder of your time waggling away like mad in an attempt merely to survive. 'Rock hard' is a fitting description for the difficulty level on this game, especially if you're not a beat-'em-up ace. I for one am still nursing a sprained wrist.

The terrorists come in many flavours. The least dangerous are those most recognisably human, which just walk through you or pepper you with little bullets, lowering your life level.

The really dangerous ones are the cyborg types and the more stationary obstacles, such as exploding flowers, robotic machine gun bunkers, force fields, and little R2-D2 type things which pop up, shoot , then slink back down again.

The weirdest enemies are the crows that fly about dropping hover bombs. These float gently down until they get to eye level, then streak across the screen at you causing a great deal of damage.

Some of the crows seem possessed of the kamikaze spirit, crashing into you with predictable results. You soon start feeling a bit like an American aircraft carrier in the Pacific of 1944.

When you finally reach the end of the first level you come face to face with the end-of-level nasty. In this case, it's an armoured cyborg-cum-helicopter, and if you're to have any hope of defeating it, you'd better have collected enough energy pods along the way.

With enough of these under the belt you are automatically transformed into a hulking motorised robot, and your laser is given a few more watts of killing power. Without these, you might as well use a peashooter on the chopper for all the good your sword will be.

He spits homing missiles at you, and generally gives you the impression that your presence is not appreciated. Must have been something I said or maybe something my best friend should have told me.

After a couple of attempts (who are you trying to kid? Ed), I finally defeated the beast and proceeded to the second level. From this stage onwards the warrior's agility is one of his best weapons. Climbing ropes and somersaulting over obstacles and holes in the floor is essential if you are to progress further.

It didn't do me much good, however, as I seemed to spend more time jumping into trouble than out of it, landing most of the time either in a force field or on top of a very annoyed robot.

For these reasons, and by virtue of the fact that I'm about as naturally gifted for this type of game as Gordon the Gopher, I got no further than halfway through the second level.

The game gave me a generous five lives, but these were quickly squandered as I stumbled around frantically leaping and shooting in every direction save the correct one.

For non-stop, smoothly scrolling action, Strider 2 is hard to beat in every sense of the word. There are already far too many beat-'em-ups on the market, but if you're thinking 'not another one!' then think again. Strider 2 is a cut above the average and definite value for money.



That`ll teach him! The laser is your only hope of killing things at ranges beyond arm`s length.

Graphics

Animation is good and everything works smoothly, quickly and colourfully. Perhaps not state of the art, but entirely adequate.

Sound

Surprisingly naff, considering the sort of game we're talking about. The usual grunts, bangs, whizzes, and the rest, but nothing stunning.

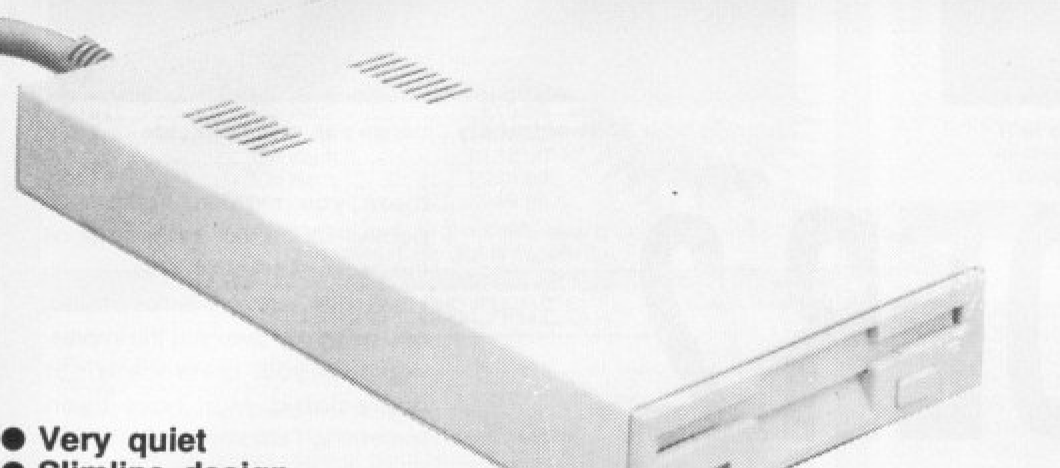
Gameplay

Fast and frantic all the way. Strategy-wise it won't stretch the old grey matter, but in the action stakes U.S Gold are on to a winner.

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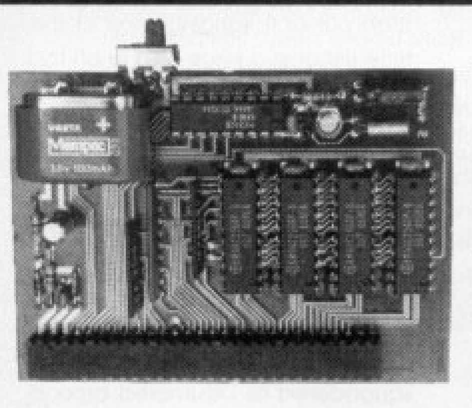


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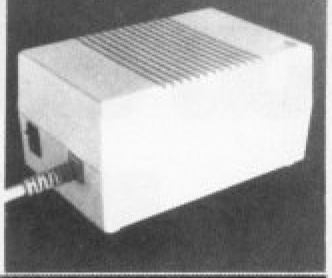
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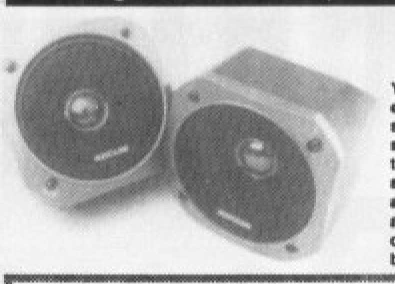


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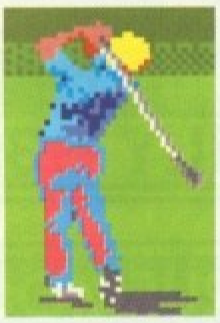
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Jack Nicklaus' Unlin Course Design



Publisher: **Accolade** Price: **£29.99**

As a Scotsman, I greeted this game with a great deal of enthusiasm, afterall we did invent the sport, you know. I am one of the millions of golfers who enjoys a love/hate relationship with the game – I love it when I play well, and hate it when I play badly.

Come to think of it, I also hate golf when it's windy, raining, or cold, and when I've forgotten my umbrella. I despise it when my little towel becomes wet and full of sand from one of the many bunkers I've landed in. It gives me apoplexy to watch my brand spanking new ball go whistling into a patch of what passes for rough, but appears on closer inspection to resemble a miniature Amazonian rain forest on a bad day.

The chance, therefore, to hack my way round 18 holes from the comfort of an armchair, without once having to replace a divot and struggle up to the next tee with half a ton of equipment, was too good to miss.

The reality was that I ended up huddled in front of a monitor, squinting red-eyed at the screen from a distance of about two inches, no doubt absorbing x-rays at an alarming rate, and swearing profusely at a little white dot as it drifts smoothly into a stream.

It perhaps a measure of how rapidly Jack Nicklaus' Golf becomes addictive that this stage was reached after about four holes. The idea is the same as countless other golf games, from Leaderboard to PGA Tour Golf. You are given a graphical representation of the hole from the player's viewpoint, with information on total yardage and distance to the hole, offered a selection of clubs, and finally you take your best shot.

All the golf games on offer do more or less the same thing, which is hardly surprising since they all simulate exactly the same sport. So as you already know what to expect when you open the box, any newcomer has to be able to prove that its implementation of the scenario is good enough to set it above the rest.

As far as actually playing the game is concerned, Jack Nicklaus' Golf offers nothing new. You aim your shots by moving a marker across the top of the screen, adjusting for wind as represented by accompass-style wind direction and strength indicator, then take the shot, whose force and timing is controlled by clicking on a standard power bar at the left of the screen.

Hardly advanced gameplay, especially as the classic Leaderboard, now four years old, was controlled in much the same way. You won't find any of the 'ball effects' and swing factors that Greg Norman's Ultimate Golf offers.



This is Muirfield Village, Ohio, the game's main course



First, off for a spot of driving practice

It would have been nice to be able to open and close the club face as you can in the latter, but as these could be said to over-complicate things, the omission is not much of a handicap when you compare the two games.

The usual options are well catered for. You can play with up to three friends or against up to three computer opponents, in stroke or matchplay situations, and at beginner or expert level.

A novel and laudable addition to the standard format is to allow for female players and womens' tee-off positions. A regard for gender is all too often missing from sporting simulations.

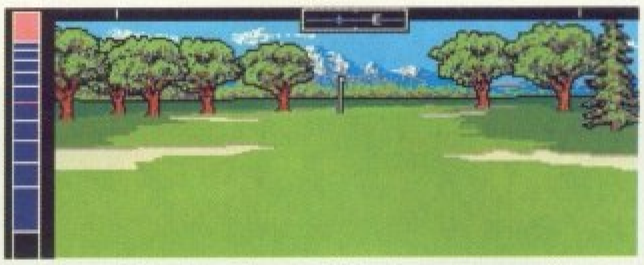
Other nice touches include a club membership list, to and from which you can load or save players, the ability to play 'skins' – matchplay for money – and a hole-in-one club which, strangely enough, I've not yet joined.

The options menu, available at any time, offers a switch to the overhead view. It replays your best shots – or your worst if you're a masochist – statistics for the round, and the chance to alter the course conditions.

By messing about, you can set up the round to suit your own tastes to a tee (groan! - Ed), and the hands-on involvement this offers is enough to make the game enjoyable and the whole thing more personalised.

One lingering doubt about the gameplay is that it can often seem a bit too easy, particularly for someone with my lack of real golfing skill. The timing of the shot is relatively simple, so gameplay boilsdown

limited Golf &



A view of "Stevie's Elbow", 3rd hole at "Murderously Difficult



What a drive! The practice seems to have worked



Oh – I never practiced bunker shots. Back to the drawing board

mainly to the strategic choice of clubs and the way in which you decide to play each hole.

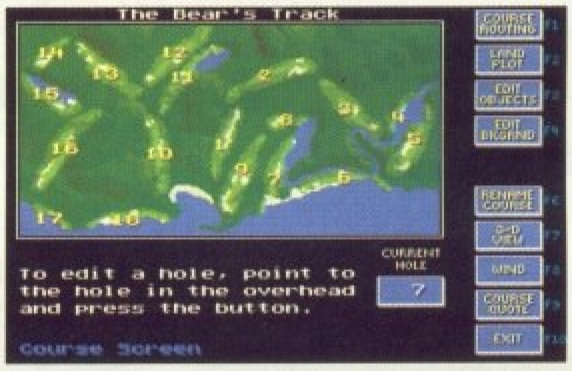
Should you thump a three wood, thus risking a wild slice, or lay up with a measured iron and hope for a good wedge shot? How much borrow should you allow for, given such-and-such a putting distance and the indications on the break meter?

These are your main concerns, rather than decisions about the golf swing itself. In the end it doesn't detract from the gameplay, as the course supplied, Muirfield Village Ohio, is difficult enough, and the greens treacherous enough to keep you interested.

Jack Nicklaus' Golf, however, is not just about hacking your around a course. If you know anything about the game, you'll know that since retiring from full-time golf a few years ago Jack Nicklaus has become a leading course designer and constructor, his links popping up all over the world.

The unique feature of this program, therefore, is its course design element, and it is an element which takes up 80 per cent of the 156 page manual. No prizes for guessing which half of the package Jack was more interested in.

Course design is really quite easy. You start with a plot of land, rough out a course, and then build each hole in turn, every step of which is done with the mouse. Tee, fairway, rough, and green come first, as simple drawings, then objects such as trees, buildings, bunkers and lakes can be added at will.



The course designer lets you edit The Bear's Track . . .

There is a paint section which allows you to embellish the backdrops or change their colours to simulate other terrain types so that you could, for example, build a course in the desert, adding camels and pyramids for a touch of atmosphere.

Everything you need to create a course is included with the designer, so all you have to supply is the magical ingredient, imagination. If you're a bit stuck to start with, Jack provides some useful tips, and if you just can't think of any interesting ideas, you can always edit existing courses, including The Bear's Track, Jack's own creation which has been designed to show off as many tricks of the trade as possible.

There is no need to be a Da Vinci to do this. The objects are already colourful and well drawn, so just putting them where you like will create for you a course that is pleasing to the eye, if not the player. This last suggests a rather sadistic use for the course designer. If both you and your friends are golf fanatics you can design the most excruciating courses imaginable and challenge each other to play them. Or compile a collection of the 18 most difficult holes you could dream up, and swap them. There's no limit to what you could do.

Jack Nicklaus' Golf is, all in all, a pleasant piece of software to – use. The game section is perhaps a bit too easy to play, but provides enough chess-like appeal to nurture some long term interest.

The course designer is user-friendly yet comprehensive, and adds enough to the package to place it very high on the over-crowded golf game leaderboard.



. . . or create your own course

Graphics

Very nice. Colourful and interesting, if a little chunky in parts. Screen update could be faster, though.

Sound

Bit of a swish and plonk now and then, but no more than you'd expect in a golf game. Pity they left out the digitised cursing. Now THAT would have been realistic.

Gameplay

Old fashioned, without being outdated, it's golf's innate strategic element which eventually shines through. Not for arcade fans.



You are up against a sneaky and decidedly ruthless enemy in the shape of RAM



You join as fresh-faced fodder, er, NEO recruits

Buck Rogers XXVc

Publisher: **SSI**
Price: **£29.99**

Buck Rogers is the latest RPG based around the AD&D rules system and the first to be set in a world of science fiction rather than quasi-medieval fantasy.

If you're tired of hack-and-slay and would like a bit of zap-and-spray, it might be just what you're looking for, so let's don those vac suits and fry some aliens.

Fans of the AD&D game or those who have played any of the three S.S.I titles already available, will find little to surprise them here. The basic rules are the same as always and the usual role-playing conventions apply to movement and combat.

Players create a party of adventurers of various races, assign them careers, equip them, then start out towards a stated objective. The characters learn by experience. If they manage to survive, experience points are collected and spent on advancing the character to more powerful levels. All very conventional and decidedly underwhelming.

However, Buck Rogers does have a couple of new features which greatly increase its appeal. The first is the inclusion of the enhanced AD&D rule set, around which the game is based, that allows for the use of a skill system.

When a character is created the player can choose how to allocate a certain number of skill points to any of his or her career skills and any general skills deemed useful.

In this way player characters can be personalised to a degree not hitherto possible with previous SSI games, an improvement which allows a player to identify more closely with the alter ego.

The second improvement is in the way messages and events are handled. The process is quicker and smoother than in the older games, and helps keep things rolling along nicely.

Messages are also more informative and frequent, which helps promote a richer atmosphere – often lacking in previous efforts.

The scenario itself is well thought out and quite diverse. It is the year 2456 and you are raw recruits in the New Earth Organisation (NEO), headed by Buck himself.

You must explore the solar system in an attempt to thwart the plans of the evil Russo-American Mercantile (RAM), who plan to sterilise the Earth and re-populate it with their own noxious breed of genetically engineered warriors or 'gennies'.

The only way you can do this is to seek out and destroy RAM's doomsday device. But this is by no means an easy task.

To fulfil your mission you will have to travel to several planets and engage in hundreds of fire-fights. The game also demands that you co-operate with non-player characters, especially those of certain races, whose identities I won't divulge because some are in a much better position to help you than others.

Interaction with such characters is, therefore, more important than before. Previously, the most complex decision you had to take concerning NPCs was whether to talk to them in the pub to gain access to any gossip they might have, or chop them in half to gain access to their cash. All this helps to give the game more depth.

Buck Rogers XXVc is not a new game as such – rather it is an old one in new clothes, but the clothes are of a good fit and cut.

The sci-fi scenario breaths new life into what was becoming a rather stale series of games, and SSI's tweaking with the gameplay and the rule set gives it enough vitality for it to stand on its own as probably the best the four.

However, there is room for a lot more improvement if the AD&D-style games are to survive into the '90s, but Buck Rogers is at least a good start.

Graphics

About the same as we've come to expect from SSI's range of AD&D games. Nothing new here.

Sound

Very little as usual, except the odd spot effect when in combat. The signature tune is absolutely frightening, and had me diving for the volume knob as soon as it began to bleep and burp its way out of my speakers.

Gameplay

A significant improvement on previous efforts. The skill system is very good, and the program as a whole is a much better attempt at computerised role-playing.



Battle commences. Terrines are easy meat!



Victory for now and time to divide the booty

Ishido – The Way of the Stones

Publisher: **Accolade** Price: **£24.99**

The Way of the Stones is an enigma that appeared through the mists of time some 30 years ago. Boards of 96 squares, 12 across and eight down, were discovered by archaeologists in several parts of the globe within a few years of each other. Places as far apart as northern England, Egypt, the Israeli desert, the Nepalese Highlands, Japan and Central America revealed similar boards from quite disparate periods of time.

During the ensuing years scholars managed to link the boards with a philosophical school. However, it was not until an anonymous Taoist monk delivered an ancient scroll and set of 72 stones to the first person he met, that the mystery could eventually be unravelled.

So the story goes! Even without the history, Ishido is a remarkable game – the strategy of chess with the simplicity of ludo.

The 12 x 8 board is divided into two areas. The Beyond is simply the outside squares and are darker in colour than The Within – the centre 54 squares.

Ishido opens with six pieces already in place, four on the corners of The Beyond and two in the centre of The Within. The next piece to be played is shown at the top right corner of the screen in an area called The Touchstone.

Before indicating the location of the next piece on the board, two factors have to be considered – its shape and colour. A stone can only be placed next to another provided there is a link with the shape and/or colour. This is how points are amassed.

Any stones placed in The Beyond do not score, their importance is strategical. Four types of stone match provide the points – single-sided match, two-sided match, three-sided match and a four-way. The points score double for each side of a match, beginning with one for a single-sided to eight for a four-way.

The Pouch contains the 72 stones available in each set. Once these have been used or there is no possible match the game ends and the winner is the one with most points. At any point during the game you can click on The Pouch to discover how many stones remain.

To prepare yourself for the coming challenge there is a one player option available. If you feel confident you can also play the computer. But be warned, it may look as if it's being careless placing a lot of stones in The Beyond, but will inevitably come back at you with a four-way – I know to my cost!

You may also use the game in two-player mode against anyone good enough to warrant your skilled attention.

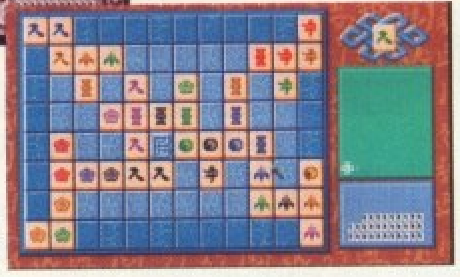
There are eight pre-defined boards and stonesets to choose from. In days of yore, Ishido players always carried their own stonesets. If they won a match then it was their right to destroy their opponent's set. An editor to design your own set will allow that personal touch to the game.

The editor is extremely user-friendly. Stonesets are designed by selecting a basic shape and then creating your own images and colours. Once you're happy with the design, you can then save to disk for use later.

Ishido will surely become one of those classic and timeless games. It will doubtless take only a minute to learn but a lifetime will be required to master its subtleties and the idibsyncrasies of your opponents.



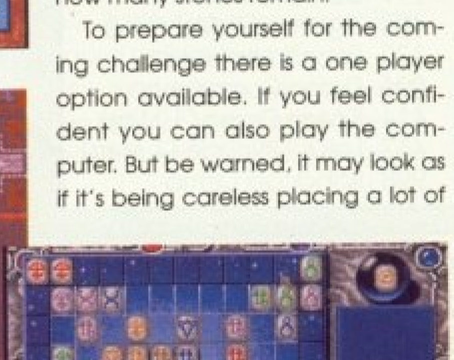
An intellectual clash of titans has begun



Two more points for a two-way match



The Shaman stoneset - pretty isn't it?



The mystical Magica stoneset and board

Graphics

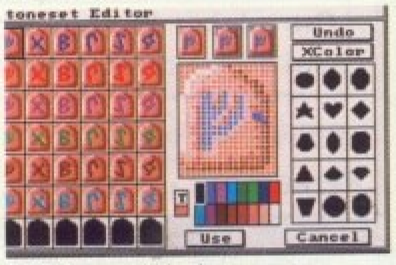
Well defined, colourful and nicely thought out. The one gripe is that on some stonesets black can easily be mistaken for brown.

Sound

Barring the bells ringing out at the start and the precise clunk of the stones as they are laid onto the board, there is little else to report.

Gameplay

Brilliantly unique! For those who find strategy games intellectually stimulating, this is a must for their collection



DIY stoneset design

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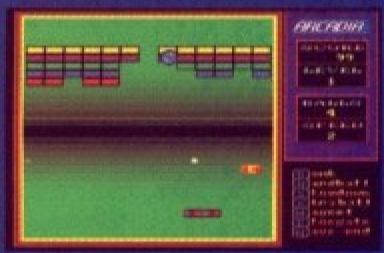
Jukebox: Plays a selection of music files with colourful, animated Vu-meters and spiralling logo [Public Domain]



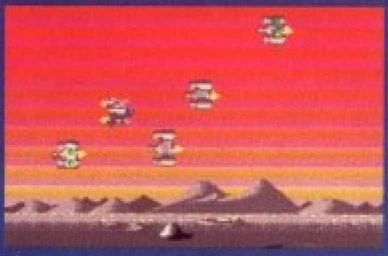
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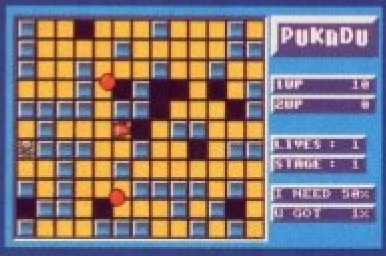
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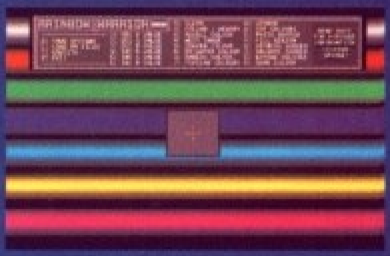
Arcadia: Breakout at its best – with a colourful copper list backdrop and a built-in level designer [Public Domain].



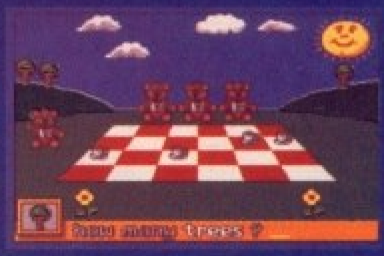
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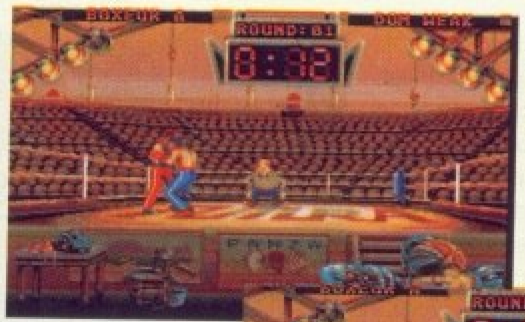
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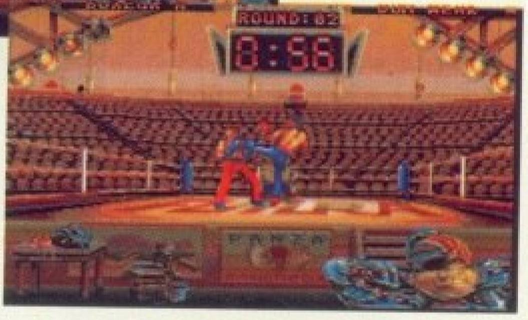
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At first, my boxer still has all his lights on as we square up ready to kick the living daylights out of each other



Before long, we're in the clinches and I've already had one of my lights kicked out!



OOF! A kick in the chops can be very painful!

Panza Kick Boxing

Publisher: **Futura** Price: **£24.99**

Smash 'im in the teeth!", I screamed, "Kick 'is head in! Go on! Kill 'im!" After 10 minutes of Panza Kick Boxing, I was shouting at my screen with murderous intent and thrashing my joystick with all my might.

Meanwhile, the neighbours were casting nervous glances at the walls and dialling 999. This game was getting under my skin in no uncertain fashion.

Panza Kick Boxing is the sort of thing your parents might have refused as a Christmas present. It is pure unadulterated violence and great fun to boot.

The gameplay is based on the French kick boxing sport, savate, as taught to the Foreign Legion. This was itself derived from Indonesian martial arts, so it's no surprise that the action can become positively blood-curdling at times.

The object is to mangle and maim your way up the leg-snapping league table, crippling consecutive boxers until you face the great Panza himself, who will promptly snap you in two.

To win will require you to develop your boxer to the point where he becomes almost superhuman, and to aid you in this endeavour some handy options are provided.

Unlike most games where you have a choice of 16 moves – the eight joystick movements with and without fire button pressed Kick Boxing offers a total of 56 kicks and punches, which you can tie into specific joystick actions.

In this way you can customise your boxer, giving him his own style of fighting, and changing it to suit his opponent. There are still only 16 moves available during play, but at least you have a say in those you can use.

You can inflict long sweeps, short jabs, or crunching kicks on your opponent, and all of them are apparently based on recognised moves from the sport itself.

Whether they are realistic or not is immaterial as they all pander shamelessly to that good old human instinct mindless violence.

If you want to cause maximum damage you'll have to put in some training, and to this end a gymnasium section is included.

If you're good enough here you can build up your reflexes, strength and stamina through skipping, weightlifting and kicking at targets before they disappear. This is quite difficult and I felt that a session in the gym left me worse off than before I went in!

The fighting itself is well animated and follows the general theme of such games. The bout takes place over at least three rounds, punctuated by a ridiculously bimbo-filled static screen.

The two boxers are viewed from ring level and a referee on call to shout "break" or count you out as the occasion demands. This goes on until someone is knocked out or the bout ends and is decided on points.

During the fighting you can judge how close you are to losing by a row of lights above the ring. These are progressively extinguished as your boxer comes closer and closer to doing a Tyson, until he finally flops to the canvas. You could say that you fight until you get your lights kicked out.

I know that some people consider this kind of game reprehensible and unnecessary, but I have to confess that I enjoyed it a great deal.

There's nothing more fun than venting your aggression in thrashing the living daylights out of a bit-mapped opponent When the game is as well carried out as Panza Kick Boxing it certainly beats chess hands down in the instant gratification stakes!



The triumphant boxer wins a trophy and I get the first aid kit

Graphics

Extremely good, with excellent animation of the boxers and colourful, detailed static screens. Could've done without the bimbo who troops on between rounds with the round indicator.

Sound

Not too bad, with reasonably sickening grunts and thwacks during the fights. Occasional touches liven it up, such as the ref's standing counts and the bell to signal the start of a round.

Gameplay

No pretenses here, just simple physical appeal, with the addition of a training section. Response to joystick movements could be quicker, but other than that I've no complaints.

ATF II

Publisher: **Digital Integration**

Price: **£24.99**

The 'thinking man's shoot-'em-up' is a peculiar beast, attempting as it does to blend elements of two distinctly different styles of game, arcade action and strategy. In some cases, such as Elite, the mix works extremely well. Does ATF manage it?

Just in case you still think this is an outright arcade game, it opens with an options section designed to make you think about what you're going to do.

Before getting off the ground you must balance your on-board armament from a choice of cannon, sidewinders, and mavericks, and weigh up your destructive potential against fuel carried. You are also given a tactical view of the battlefield over which you are about to die, er, fly.

Once you've sorted out where you want to go and what gifts you'd like to drop on the locals, it's time to get strapped in and take off. From this point on, the action takes place over a pseudo-3D landscape from an Afterburner type of viewpoint.

By utilising a 'database' of reported enemy vehicles and installations, you then fly around trying to tilt the balance of power in your favour by blowing up as many of them as possible.

The head-up display aids you in this by helpfully pointing the way on the compass bar at the top. The three multi-function displays can be used to pull up anything from a screen on the status of your remaining ammo to a tiny map of the local area.

In this respect, there is plenty in ATF to keep you busy and alert. The strategy element is just effective enough to drag you out of your homicidal stupor for long enough to find your next most important target, while the action element can sometimes deliver a decent boost to your adrenalin.



A motley collection of crew to choose from

Enemy jets are the most dangerous obstacles to your mission, and come screaming in from both front and rear. The only way to spot them before they're pumping shells into your fuselage is to keep a weather eye on the local map.

Anti-aircraft missiles are another pain in the thrusters, but can be effectively neutralised by hitting the Jam Missile button as soon as you get the missile warning.



Which country would sir care to bomb?

Graphics

Quite good until you begin to trundle down the runway. After this the game moves a bit too slowly to support the action side of things, even if there are some nicer touches such as the mini map.

Sound

Fails to impress from start to finish. Weapon effects sound reasonable, but the overall effect is dull and dreary.

Gameplay

At times the gameplay is good enough to draw you in and hold you for longish periods, but implementation of the arcade/strategy mix is far from perfect, and eventually falls apart.

Putting the payload where it counts is what the game is all about and can be far from easy. Factories and airfields can zip past your wings before you've got time to change the active weapon from sidewinders to mavericks, forcing you into a lengthy turn for another run. With jets and AA missiles whizzing around everywhere, this can often be a fatal exercise.

Come to think of it, this whole game seems a bit of a fatal exercise. When you consider than DI has brought us such classics as Fighter Pilot on the 8-bit machines, and Combat Pilot on 16-bit, the game just doesn't cut the mustard.

ATF aims for the arcade element of games like Afterburner and the strategy element of Digital Integration's best game, F-16 Combat Pilot, but falls short of both.

The attempt is simply not cohesive enough to hold the interest after a game or two, and the resultant mishmash fails to excel in either area.



Shades of Afterburner? The three displays are your main source of info



Back in the hanger to re-arm and refuel

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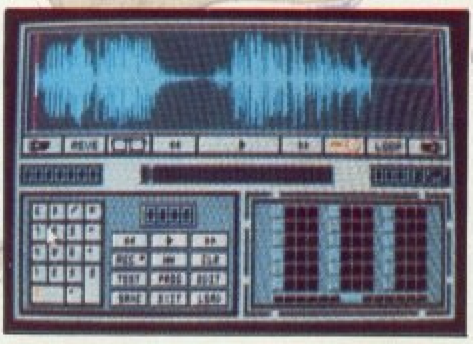
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CHIP'S CHALLENGE

Publisher: **US Gold** Price: **£19.99**

Chip's Challenge is an anachronism in its own time. This is the type of puzzle game being released in quantity, if not quality, half a decade ago. But fear not, imagination and programming skills have grown during those five empty years and the multi-level puzzle game is back with a bang!

Chip's life was incomplete. He would wander aimlessly about the corridors of his school, his mind full of images of his heart's desire, Melinda.

Some saw Chip as a dreamy character, while others perceived a greater depth of emotion, an inner turmoil of sadness and despair. Nobody knew of Chip's secret aspirations for Melinda, and as far as he was concerned, nobody would ever know. He could never imagine that Melinda would even look at him.

One day, however, the love of his life actually approached him. After recovering from the shock, Chip's imagination switched into overdrive and little red hearts began to float before his eyes. Amid feelings of intense passion and thoughts, he could hear Melinda talking softly to him, explaining that she wanted Chip to join the Bit Busters, an exclusive computer club that she was involved with.

Chip accepted the offer with some glee, but there was one final barrier. To become a club member, he had to complete a special challenge set before him. This had been split into a number of tasks but essentially, the aim was the same. Chip's challenge was to collect all the microchips that had been discarded about various locations.

At first, Chip thought that the task ahead wasn't really a problem. In fact, he found it relatively easy. It was only later that he realised the complexity of the problem. A lot of logic and puzzle solving was required, and although he was by no means unintelligent, Chip discovered just how much brainpower was needed for seemingly simple scenarios.

There were many times when Chip wanted to return home and forget the challenge, but the thought of being with Melinda in the club, spurred him on. Did Chip eventually succeed? Well, it is your responsibility to ensure he does.

Here endeth the lesson in fantasy history!

Your job is to guide Chip through the many and varied levels obstructed by a vast array of obstacles and nasties. By collecting certain objects you will be able to bypass water and fire barriers. To open the many doors throughout the game you will need the right coloured keys to unlock similar coloured doors.

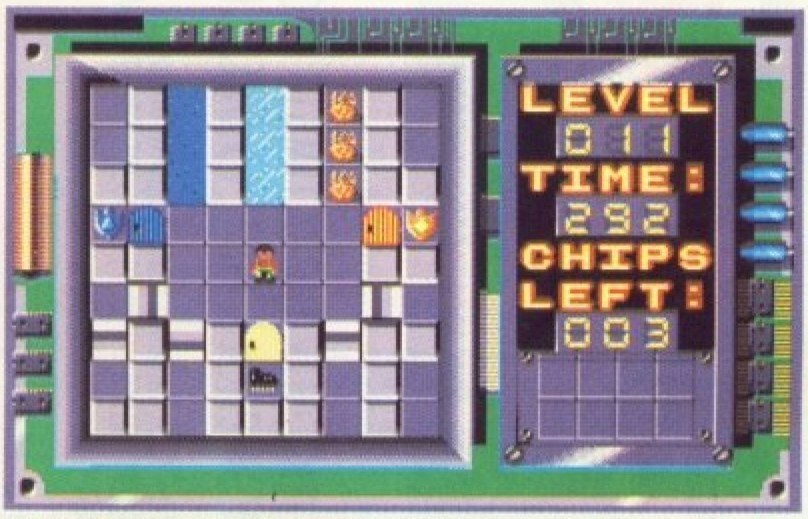
There are also small creatures and other moving objects that won't attack Chip, but should he walk into their seemingly innocent path, they will have absolutely no compunction in disposing of this earnest little fellow.

The controls are simply up, right, left, and down. As Chip is a rather shy and placid character he doesn't wield a battle axe or possess a gun, dagger, or any other type of fiendish weapon you may care to think of. He must, therefore, dodge any oncoming projectile or nasty for if he doesn't, he will have to begin the level again.

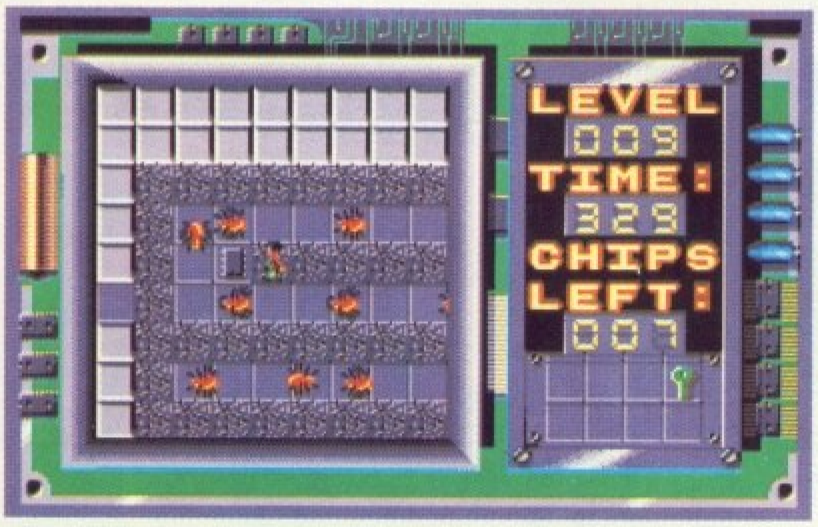
Fortunately, each level has a code number so when starting a new game, you can begin again at the level to which access had previously been gained.

Chip's Challenge is a delightful and refreshing change in the chase for bigger, better and more complicated games.

The graphics and sound may not be the best you're ever likely to see on an Amiga, but the gameplay will have you coming back for more, time after time.



There are a large selection of essential items for Chip to collect



Logic is not the only thing that will have to be used



Use the right coloured key . . .



. . . for the right coloured door

Graphics

For anyone who hasn't been fortunate enough to play the Atari Lynx version the graphics will probably disappoint.

Sound

Few and far between. Merely bleeps and clicks.

Gameplay

The game is totally addictive in a simple kind of way - you have to keep coming back for more. Totally brilliant, and well worth buying.

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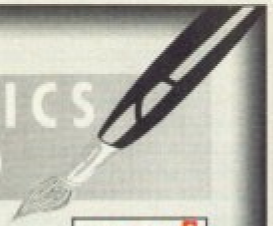
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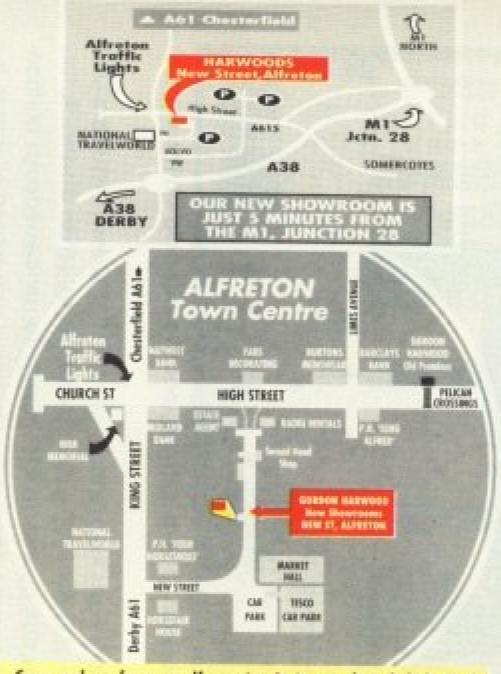
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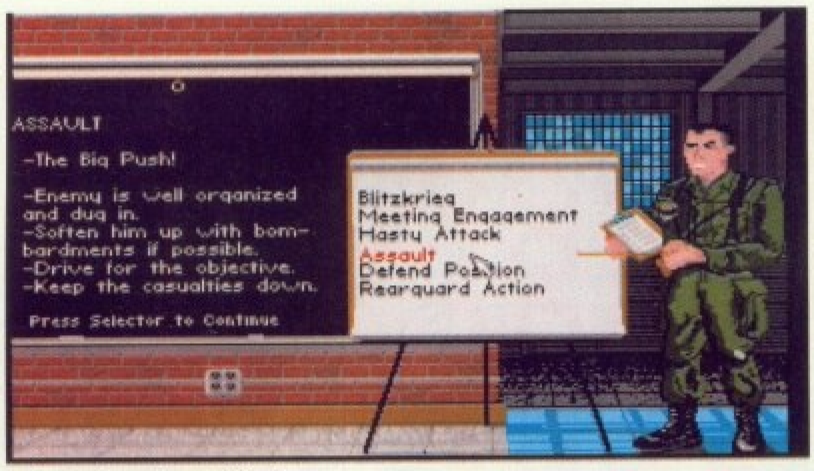
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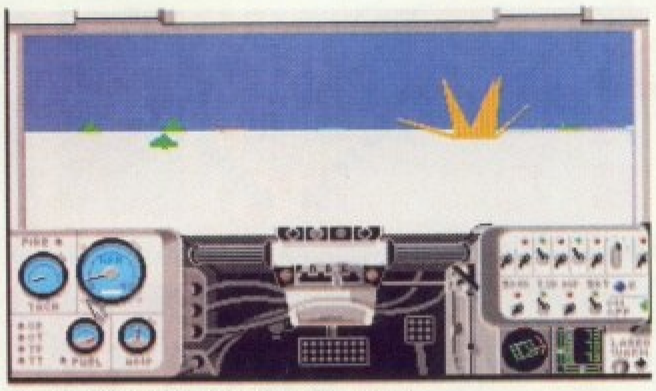
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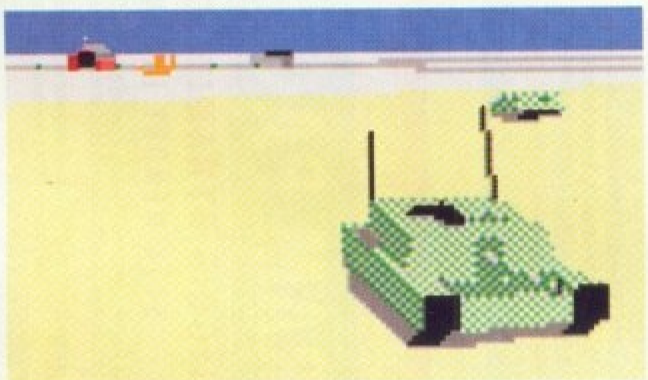
Let's go for all out attack



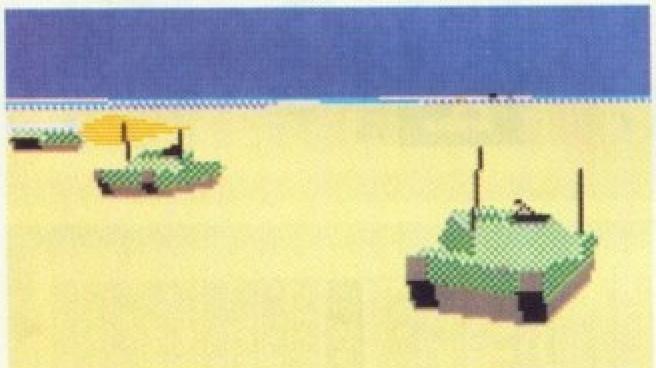
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The Soviet artillery opens up on us!



My brave lads advancing



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The mapboard affords an excellent tactical overview

Microprose has long been one of the best in the simulation business, with a record that speaks for itself. However, although titles such as Gunship, F15 Strike Eagle, and F19 Stealth Fighter have established the company as a leader in airborne battle sims, it has never threatened to shine in any other area. M1 Tank Platoon should more than redress the imbalance.

M1 is a massive game in the best traditions of the genre, with more depth and detail than you could shake a Sherman at. Simulation is all about realism, and realism can only be conveyed by attention to relevant details and an eye for the essentials of what is to be simulated. It is in this area that M1 sets out its stall.

Unlike Team Yankee, which goes for instant playability, M1 demands a great deal of reading before you actually play, especially when things begin to expand beyond the basics.

By this stage, any shoot-'em-up fan who has inadvertently bought or borrowed M1 will be giving up in disgust and going back to Xenon 2. I wouldn't be surprised if even your average strategy fan baulks a bit at the game's sheer size, but the simulation addict will be leaping for joy.

There's nothing like a really beefy game with wadges of realistic detail and a manual like a phone book to excite the simulation freak. M1 is lucky in that there are plenty of those in the Amiga world.

You take the place of Platoon Commander in charge of four M1 Abrams main battle tanks and various other support vehicles, calling in air and artillery support, and co-ordinating mechanised infantry, AA units and other tank platoons as the scenario demands.

This rapidly becomes unbelievably chaotic, with up to 16 friendly vehicles and any number of Soviet units rumbling around firing at each other. After a few minutes issuing frantic and often contradictory orders to my bewildered brothers-in-arms, I was forced to turn to the manual for help.

The manual is excellent. If you want to get into the game quickly, the relevant sections can be rushed through and enough knowledge of the game controls can be garnered in about half an hour's study.

In the Amiga version, almost every command can be input either via the keyboard or by clicking with the mouse on the appropriate instrument or switch. So you can often guess where to click if you're not sure of the correct command. This definitely makes life a bit easier for the beginner.

Play is controlled from the mapboard and if you're smart about it you'll spend most of your time here. You can order your vehicles around and give them every order they might need from this section. If you allow them to fire at will, they will fight the battle for you.

One grumble I had with the mapboard concerns the huge number of available commands. I know that flexibility is important to a game like this, but it's very easy to get confused.

This initial confusion doesn't last long, however, and you soon master the command system in enough depth to allow the simple deployment of your forces. As long as you avoid leaving your tanks stupidly exposed to Soviet fire, such as sideways-on or outlined against the horizon at the top of a crest line, you should have little difficulty in eventually getting through small engagements against inferior opposition. This, however, is the tip of a rather large iceberg.

One of the first nice surprises the program offers is the chance to create your own platoon of tankers, complete with name, rank,

M1 Tank Platoon

Publisher: **Microprose** Price: **£29.99**

promotions awarded, and skill level. After each successful battle you will have a certain number of awards or promotions to hand out to the survivors, thus increasing their skill levels and boosting the whole platoon's rating.

The role-playing element is a very nice touch as it gives you the chance to become attached to a platoon. This discourages tactics that would lead to high casualties and encourages a deeper involvement in the game as a whole.

With your platoon of rookies in tow, you go on to choose static or moving gunnery practice, single engagements of various kinds, or a whole campaign for them to battle through.

Luckily you can vary the experience level of Soviet troops from second-line to elite, giving you complete control of the difficulty level.The latter options are recommended only for the more experienced player, but the beginner won't find the easier ones a walkover.

When you finally get down to playing the game in a real shooting environment it soon becomes clear just how good M1 is. Take, for example, a scenario where you must assault a well-defended position in which the Soviet troops, even if they are only second-liners, are dug in and ready for trouble.

In a real life situation, American tactics would be to order up air and artillery support to soften the enemy's resistance, then attack from a position designed to minimise casualties. In addition, you would expect US troops to act in a highly individual way, using firepower to its greatest effect.

M1 Tank Platoon allows you to closely simulate exactly this sort of situation. In the above scenario, you would have artillery support available in the shape of mortars, howitzers or MLRS rocket launchers, air support from scout or Apache attack choppers, and even Thunderbolt A10 tank destroyers. These can be called up at any time and in the case of the artillery, can be directed onto any target on the mapboard.

From the same screen you can organise flanking attacks, smoke screens and a variety of complex tactical moves and formations, controlling not only your own platoon, but any other attached unit or vehicle if this is where your preferences lie you need never leave this part of the simulation, putting yourself more in the role of overall company commander.

Should you want to see a little more action, and I suspect that means most of you, put yourself into any one of the four M1s under your command and in to any of the four crew positions. You have the choice of either watching as the crewman concerned gets on with his job, or of taking over the controls yourself.

Either way, the program ensures that the other crewmen carry on doing their jobs, which makes the job of controlling all 16 men a lot easier.

For instance, from the driver's position you could change course and head in a new direction. The gunner, however, will track whatever he feels is the most dangerous target, and continue to fire at it as long as he has had the 'fire at will' order.

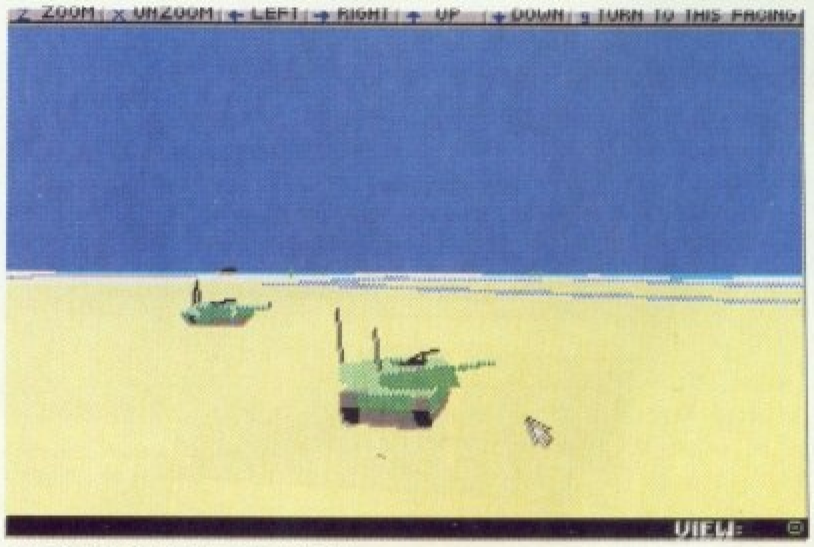
The entire package exudes an air of quality, which bears witness to the immense amount of thought Microprose has put into this game. From research and development, through the game mechanics, to the manual and general presentation, both attention to detail and the simulation of modern armoured warfare have received the closest scrutiny.

After only a few hours playing the game, it becomes obvious that even the most avid games player will find enough in M1 to keep him or her going for a lot longer than your usual simulation.

In short, if you're looking for depth and realism and if you don't mind spending a good while learning how to play the game, then M1 Tank Platoon is the only choice.



Tank commanders can join in the fun with the 0.5 inch calibre



The external views are superb

Graphics

3D vector graphics aren't anything revolutionary, and M1's graphics are pretty basic in this context. They are entirely adequate for the game, if a little slow, and good enough to support the simulation.

Sound

Rudimentary and functional. You get the odd bleep from laser warning lights, and some decent booms and bangs when things get dangerous, but no more than the essentials.

Gameplay

Superb. Any simulation fan will go bananas for M1's depth and detail, and will simply swoon over the depth and realism on offer. Others would be well advised, however, that this is one game whose gameplay requires patience and persistence.

If you're a motorist, you'll know all too well how easy it is to get lost on Her Majesty's highways. Only the other day, I journeyed up from my home in Somerset to meet the *Amiga Computing* guys in darkest Macclesfield.

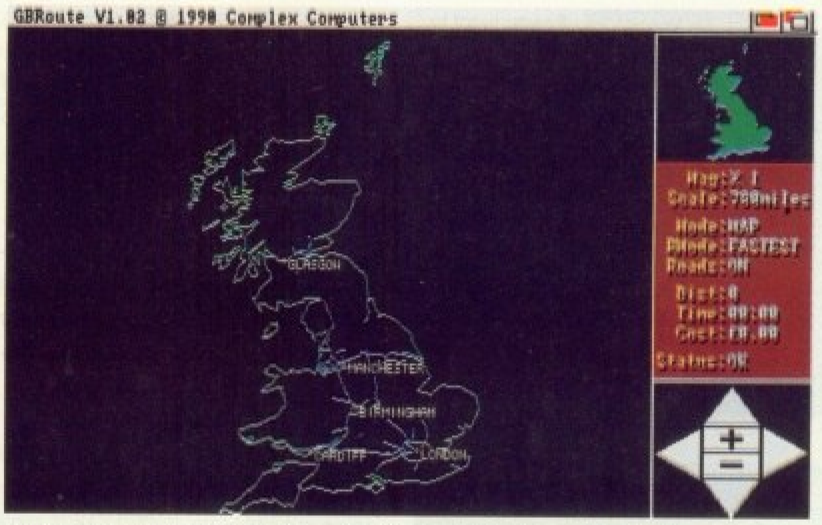
The journey seemed simple enough, through some windy west-country roads until I reached the motorway which would take me all the way to my intended destination.

Of course things are never that easy. After little more than an hour's driving, I was well and truly lost. The fact that I'm not particularly good at reading maps didn't help matters either, so the situation seemed pretty desperate.

It wasn't until I'd driven around in circles for a few hours that I eventually started to make progress. Two hours later than expected, I arrived (to a well earned free lunch, I might add!) at the home of *AC*.

Of course what I needed was GB Route, a brand spanking new journey planner program from a previously unknown company called Complex Computers. The aim of the program is simple enough, to tell you the best way to get from one place to another in our great country.

All you have to tell the software is where you are and where you want to go, and GB Route tells you how to get there in clear and concise route instructions.



After loading, this is what you'll see. Just think, you should never get lost again!

Hazy routes?

If ridin' around in your automobile is the cause of many lost hours, GB Route is the way forward. Jason Holborn plots a course…

First of its kind

Although this is the first program of its kind on the Amiga, excluding the PD program RoadRoute, it certainly isn't unique. PC owners have been happily journeying from A to B for years now, thanks to the program that started it all, NextBase's AutoRoute.

NextBase even released AutoRoute for the Atari ST, but for reasons unknown, the company never actually got around to developing an Amiga version (*probably because piracy was rife on the ST version – Ed.*).

In a way, non-appearance was probably a good thing. At £150 a throw, AutoRoute certainly didn't come cheap. (*And now you have the reason for the piracy – Ed.*) GB Route, on the other hand, is dirt cheap, just five pence short of the magic £40! For your money, you get a fairly low-budget package containing a single program disk and a spartan manual.

I'm a great believer in reading manuals before going too far into a package, so I sat down and had a quick glance through GB Route's manual – and what a complete pile of used printer paper it turned out to be!

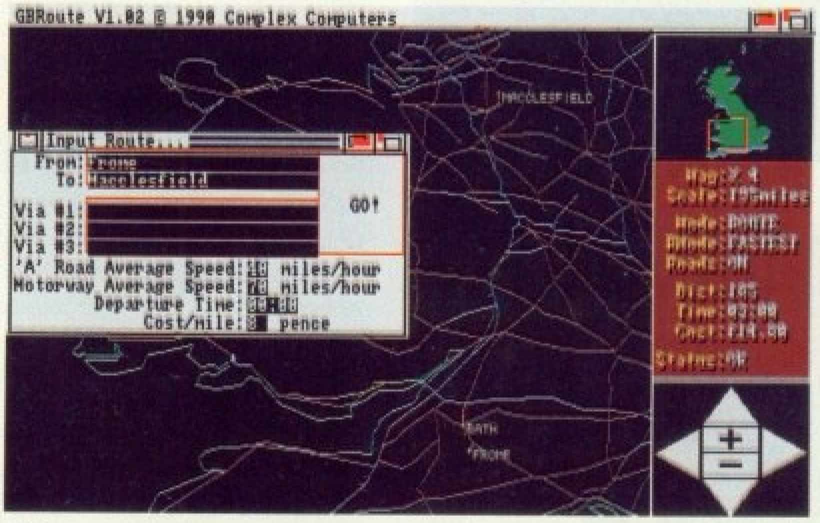
Whoever wrote it should be shot. My grandmother could have written a better manual. You can therefore guess where it ended up – yep, filed away in the old circular filing cabinet.

Considering the vast amount of data which a program such as GB Route handles, it came as a great surprise that it actually runs on a standard 512K Amiga A500. You may, however, encounter problems if you try running the program from Workbench. It really needs at least 400K, so things can get a bit tight on an unexpanded machine.

After loading, it opens its own custom screen, so it's perfectly possible to run it in conjunction with other programs (I hate applications that run on the Workbench screen).

If you have a hard drive, Complex has thoughtfully provided a suitably Workbench 2.0-looking icon, so installation involves little more than copying across a couple of files.

In practice though, because GB Route runs entirely from RAM – unlike AutoRoute which suffers terribly from disk swapping, there's very little to be gained from such a move. Apart from increased program loading speed, of course.



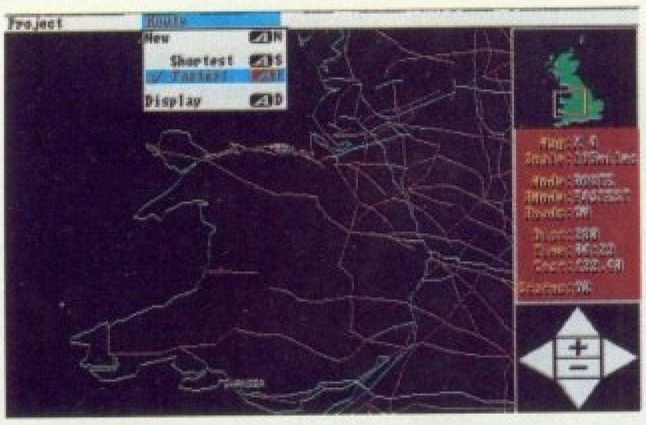
Click on the New button and this requester appears. Now enter your start position and required destination, click on the GO gadget and et voila – the fastest route between Frome and Macclesfield

Twin screen

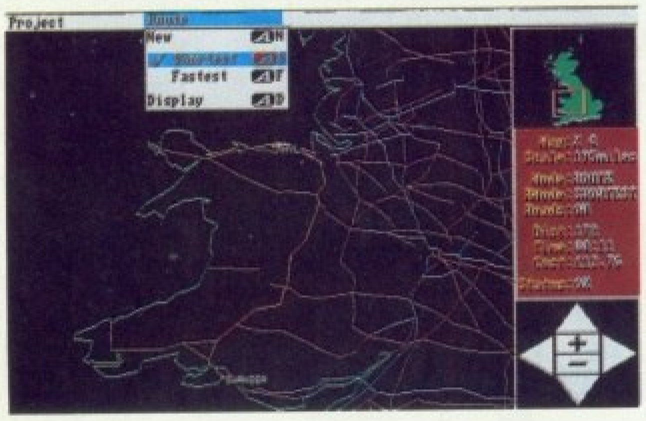
The screen itself is split into two sections, a map window and a status window. The map window is the most interesting of the two because it displays a very flash graphical representation of the British Isles.

When you first boot the program this window displays the entire map, but it changes to more specific areas once you start to use the program.

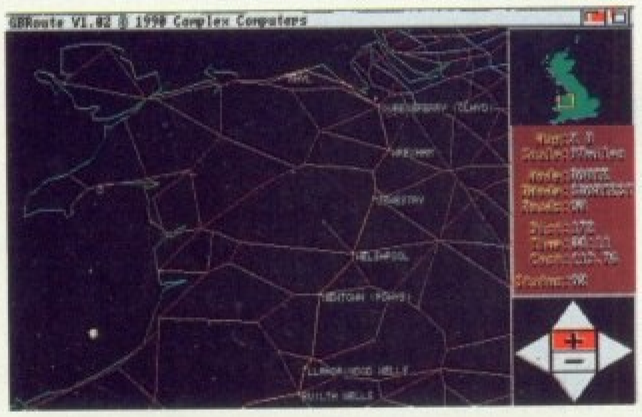
The map display actually operates in two different modes – Route mode and Map mode. In Route mode, only those towns, cities and junctions which are part



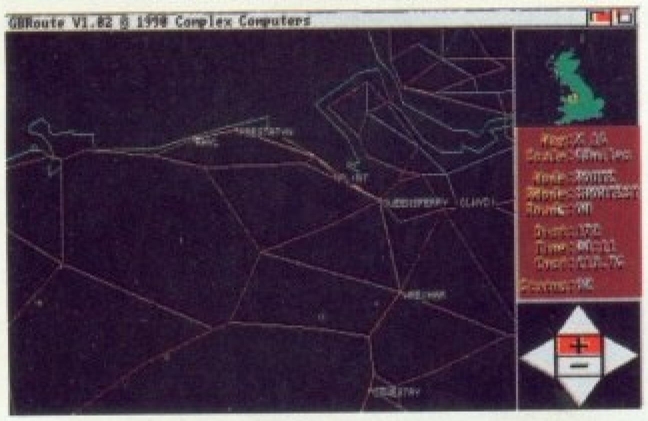
So you want to go from Swansea to Rhyl, eh? Well here's the fastest route...



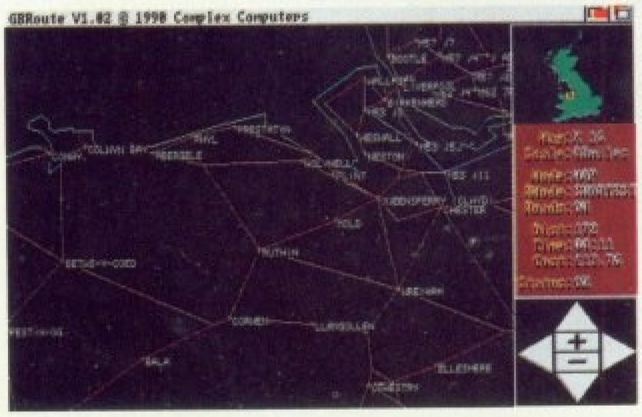
...and here's the shortest route



Now let's zoom in and have a closer look at our chosen route



The further you zoom in, the more detail is revealed



Finally, you can switch to map mode to view the surrounding area

of your chosen route are shown along with the route itself.

In Map mode, GB Route attempts to stuff as much map data onto the screen simultaneously, thereby allowing you to get a much better overview of the surrounding area.

The status window contains all sorts of useful information about the routes that GB Route recommends – total number of miles, journey time and so on.

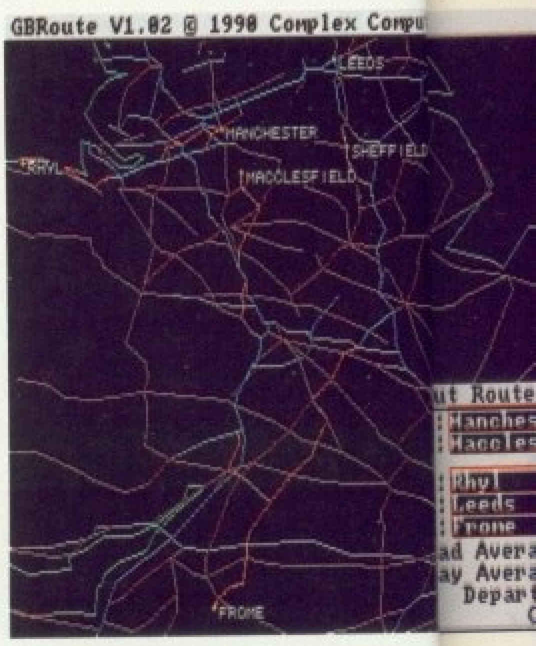
Above this is a vastly scaled down representation of the British Isles complete with a red box which highlights the area currently shown within the map window. As you move around, zooming in and out, this little red box is updated accordingly.

Below both of these is a selection of control gadgets that allow you to move around the on-screen map. There's the usual north, south, east and west, and you can zoom in and out to show greater detail.

Because of the large amounts of data being manipulated, it can take a second or two to actually get around to redrawing the map, so it's all too easy to find yourself waiting for the program to catch up with your frantic mouse bashing.

Obviously the first thing you'll want to do is to feed in some dummy data and see what GB Route comes up with. To do this, select 'New' from the pull down menus and a nicely laid out requester appears. This contains several gadgets which require before you can go any further.

For most of the time, the only thing you need to tell GB Route is where you are and where you want to go. However, it also allows you to visit up to three different



locations en route.

Once you've keyed in the necessary data, a brisk click on the 'GO' button will set it thinking. If you're used to using AutoRoute, then you'd expect to wait for a fair old time for something productive to start happening, but GB Route is blindingly fast in comparison.

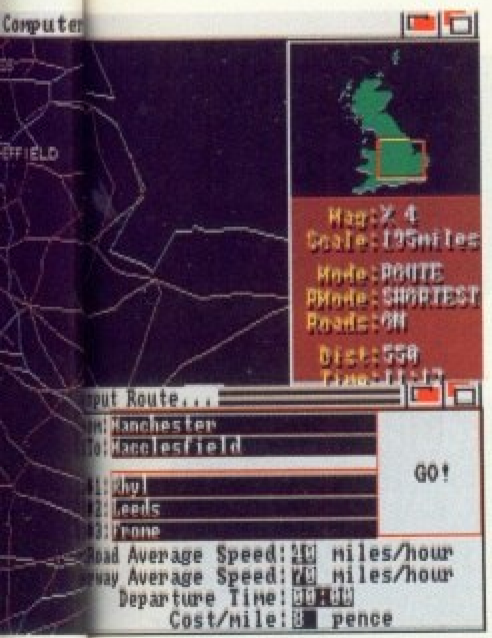
Most routes are found in under two seconds, while longer routes never take more than four. As an example of the program's speed, I timed how long it would take to calculate the route between John O'Groats and Land's End. The results were certainly impressive – an unbelievable 4 seconds! With a processor accelerator installed, this is even faster!

In reality though, it's not quite fair to slam AutoRoute for being so much slower. Fact is, GB Route only knows about A-roads and motorways, while AutoRoute includes virtually all roads. Complex Computers claim that it is already working on an upgrade

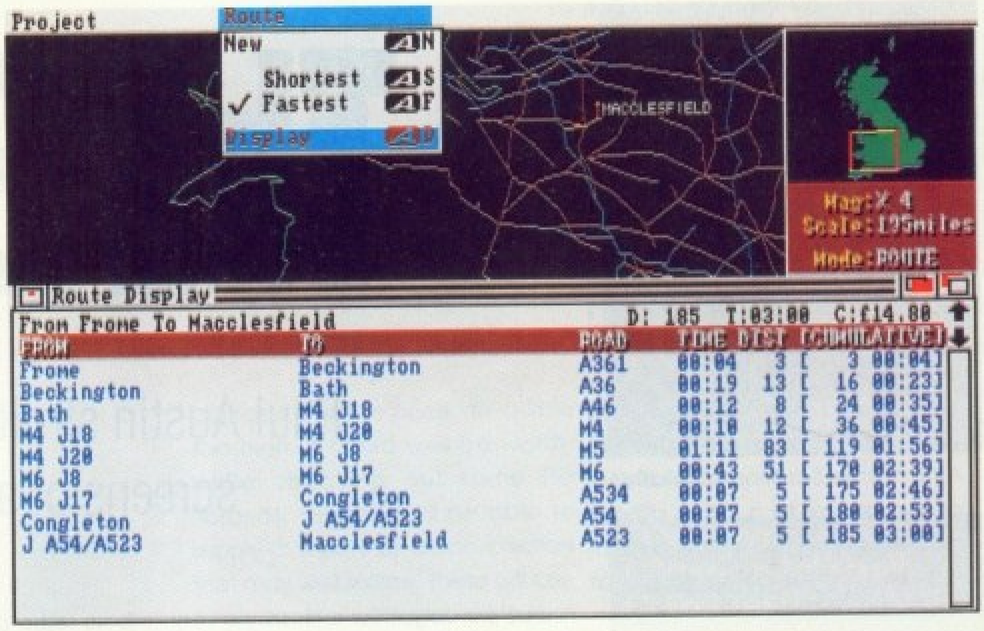
GB ROUTE: THE FUTURE

So what's next? Well, according to Complex, the company is already hard at work on an upgrade which basically, will be GB Route 2 (or GB Route Professional, as it will probably be called). This will include many enhancements over the current release including full support for B-roads. There will also be a number of extra utilities which will allow you to select places simply by clicking on them with the mouse.

Keying in all that extra data is sure to take time, so don't expect to see GB Route Professional for at least another six months. And if that wasn't bad enough, things get even worse for 512K Amiga owners. The new version will require 1Mb, so you'll need to invest in a RAM expansion if you want to step up to what will undoubtedly be a much more powerful product.



If you fancy a slight excursion, then you can also journey to up to three different locations on your travels.



If your map reading is a little rusty, then the DISPLAY option allows you to see the route in plain (?) English.

to bridge this gap, although this isn't due for at least another six months. Whether this will substantially slow the program down is unknown, but I'm sure GB Route will still come out faster!

On the map

Once the program has found you a suitable route, the map window is automatically redrawn to show it to you graphically. The route itself is highlighted, with the surrounding roads shown in a much duller colour.

One nice feature is the ability to dump this map to paper, although Complex does advise you to switch to inverse printing unless you've got a death wish against printer ribbons the whole thing will come out as a huge black rectangle!

If you need more detailed instructions then a separate Display option is available which lists the route in plain English. This can also be dumped to a printer, so you shouldn't have too much of a problem following its advice.

GB Route looks for two different types of route, the fastest and the shortest. The fastest route is calculated by assigning different speeds to different types of road.

By default, this is set to an average speed of 40mph for 'normal' roads (A-roads) and 70mph for motorways.

These can, however, be changed to anything from 1mph to 99mph – you didn't expect to be able to enter speeds in excess of 100mph did you? – so it's possible to control what type of roads the program uses.

If you hate motorways, you can make sure that GB Route avoids these as much as possible by setting their average speed to something like 10mph which, let's face it, isn't unusual these days.

It then uses what it believes to be much faster A-roads. On the whole, the routes calculates certainly seems to be pretty believable. I did, however, find a bug which I'm quite sure Complex isn't aware of – if you enter Swansea as your starting location and Rhyl as your destination, it will come up with an incorrect result.

According to GB Route, the fastest route – which amounted to a total of 280 miles of motorway – would take you 4 hours and 23 minutes. But, and this is where things start to go wrong, the shortest route, through 172 miles of beautiful Welsh countryside, would only take you 4 hours and 11 minutes. Explain that one!

Despite this minor hiccough, which Complex is already looking into, I like GB Route a lot. In fact, it's a shame Commodore still hasn't developed a portable Amiga.

If such a device existed, this would be one of the first items of software that I'd install. This way, you could take GB Route with you anywhere! Oh well, until then I'll just have to be content with a printout.

POINTS TO VIEW

WITH all that road data to contend with, developing a product like GB Route is by no means an easy task. Surprisingly though, it was actually written single-handedly by workaholic programmer Steve Fletcher of Complex.

Steve has been slaving away for the past nine months, often working solidly for up to 18 hours without sleep. Even now, when most sensible programmers would be catching up on some well earned rest, Steve's already started work on an upgrade.

According to Complex, the most laborious part of developing GB Route was actually feeding in the map data, which the company claim amounted to over 15,000 individual points!

Unlike NextBase, who actually licensed the Ordanance Survey's digital map data, Complex actually had to key in each individual point.

The main reason for this blatant masochism was to keep costs down, thereby allowing Complex to sell the product at such a low price. If it had used the Ordnance Survey data, then the price tag could well have risen substantially.

Each point was assigned its own co-ordinate on the map which was fed in along with the place name. Using a sort of complex matrix arrangement, these points were linked to form roads.

When GB Route draws a map, it interprets the information held within its matrix to form a vector-based representation of the map data.

This obviously means that the roads between points will always be straight, but the distances themselves are based on the real world.

As a sideline, you may be interested in this little statistic. According to Complex, with the 15,000 points that are held within the current release, the program is actually capable of generating three and three quarter million route variations!

As the product is upgraded with even more points, this figure will increase considerably.

The bottom line

GB Route is the program that every mobile Amiga owner has been waiting for.

If you do quite a lot of travelling around the country, then this should be at the top of your New Year's shopping list.

Not only will it get you to your chosen destination, but it could even save you money on expensive petrol costs.

And with a price tag of just £40, you just can't go wrong. Buy it now! (*Here endeth the advert. Seriously though, it is good innit? – Ed.*)

GB ROUTE
£39.95
Complex Computers (0706 224531) 221 Bacup Road, Raetenstall, Rosendale, Lancashire BB4 7PA.

The Big Altern

Paul Austin strolls through the scrolling screens of an alternative titler

Are you the next Scorsese or Spielberg? Do you have designs on your very own Hollywood Hill? If you could only add that little touch of class to your home videos, might your creations be destined for the silver screen?

Perhaps not, but you could at least capture Tracy and Darren's big day with just a little more panache.

Dream no more, the answer to your prayers has arrived – The Big Alternative Scroller, a relatively cheap answer to a rather difficult problem brought to you at a nominal fee from the boys and girls at Alternative Image.

If you are the proud owner of a camcorder, you may well be looking for a change from to pieces of card with scribbled titles thrust before your lens when titling your masterpiece. The Big Alternative Scroller is designed to fill that need.

The program is the first of a series of products from the company, all of which deal with various problems in the graphics and presentation field.

Each of the series will retail at £50 a time. This price tag alone will no doubt help a great deal to to establish them in the semi pro/home user market.

The scroller is a perfect example of DIY at its best, but don't take that as a criticism. The package is well put together with some very neat features all written in code, which keep the program fast and smooth.

It is entirely the product of necessity as it was originally developed by the company for their own in house use.

There is a great deal of competition in the video titling market at the moment. Fortunately for Alternative Image, most of it costs well into the three figure bracket and consequently the scroller should be a very attractive proposition in certain circles.

How it works

Twenty fonts of various shapes and sizes are built into the software, varying from banner size down to standard print. Unfortunately, there is no resize option available, so I'm afraid you're stuck with what you get, which may cause the occasional problem.

The fonts are also not anti-aliased, a feature to be found on some of its more expensive competitors. This results in a slightly blocked outline that can be noticed on close scrutiny of certain fonts. Even so, the graphic quality is still high and as all fonts are produced in high-res the end results are still impressive.

All the fonts print instantly so there's no problem when typing at speed. The program happily keeps up with even the fastest typist – not a boast yours truly can make.

It's also possible to colour individual letters, even in the same word, making available simple but effective screen designs. Each of the available fonts also incorporates a drop shadow feature, an option no doubt added for the benefit of the genlock users among us.

This provides variable length and direction of shadow, not to mention a separate colour from that of the letter it accompanies.

Four colours are available for each title sequence produced. Each arrangement of colours may be saved along with the sequence if required.

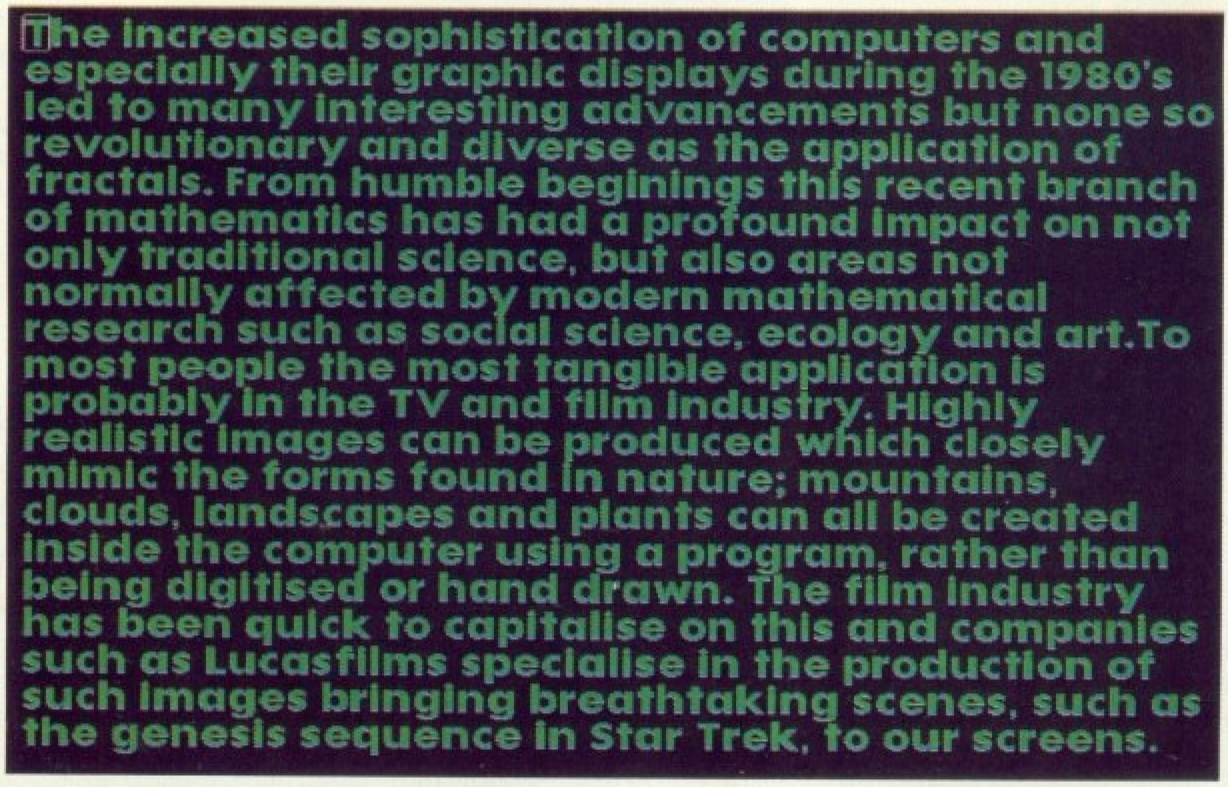
Four colours may seem slightly limiting, but the colour design for each sequence can be very versatile. The colours can be individually passed through an RGB filter system altering the shade or colour of each element as required.

Text positioning is also a simple matter. This is done by moving a bar via the arrow keys. Using this option it is possible to set both bar height for a horizontal scroll and margins for vertical scroll. There's also an option for centring and offsetting the text to the left or right of the screen.

You may at this point be asking yourselves what the other titlers do that this won't. Quite simply it's a case of versatility.

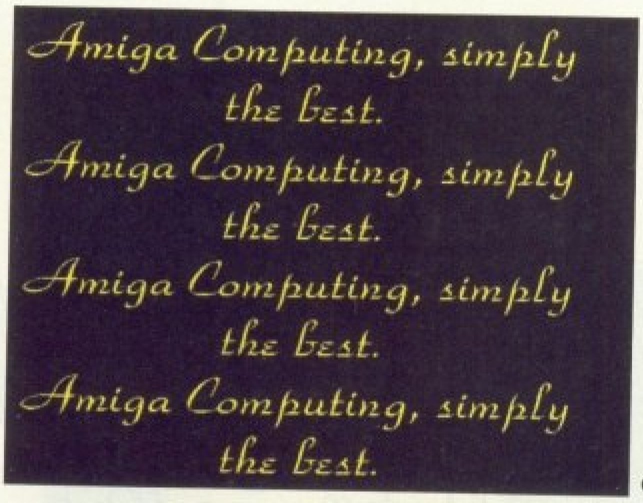
The Scroller is very good at what it does, but it will only present text in two formats, either as a vertical or horizontal scroll. It will do both these in a variety of eight possible speeds, which may be switched between as the program is running, but that's it. No importing fonts or graphics, no whizzo special effects, and no sequence programing. As I said , no frills.

If multiple colours, fades, flips and strange scroll angles, to name



This is just about as small a font size as you are offered

rnative Scroller



Classical stuff

but a few, are what you require take a look in the direction of something like Broadcast Titler, this will do all these things and more. It will, however, set you back over £200 for the privilege.

Friend or foe

Did you ever get the feeling that a piece of software actually hates you? Do you just know that given the chance it would jump from the screen, spit in your eye and proceed to tell the whole world that you're thick?

Not so this product. Operating the program is a real joy, with all the various features leaping to attention as soon as the required button is tickled.

It may be worth considering the scroller for things other than straight forward video titling. It could be used equally well for producing auto cue sequences, shop window displays and various other public relations exercises.

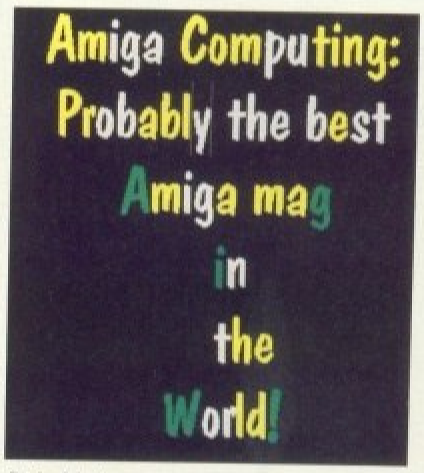
A particularly useful feature is the ability to import ASCII text direct into the software. This will no doubt attract a lot of authors who wish to import and display their craft instantly for any number of uses.

If you're only an occasional user of presentation software, or perhaps find the price still a little too high, it could well be worthwhile checking out some PD libraries. They should be able to supply a variety of demo creators that may well suffice. These will certainly lack a little versatility, but they'll be cheap and will still display your text.

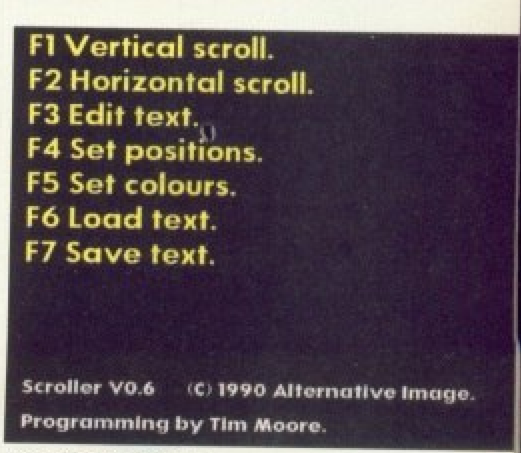
The main criticism of the package lies not in its lack of features, but rather with something that should be a present regardless of cost. This is the scrolling of the text, probably the most important element of any titling package.

At slow speeds the text is smooth and relatively flicker free. If, however, you wish to display text at higher speeds the scroll is still just as smooth, but the flicker becomes quite severe, making it difficult to read some of the smaller fonts. This is the only real problem with the scroller. Unfortunately, it's quite a big one.

Well that's what you get for your pony! Basically a fast and compact utility without the frills found on some of its more expensive rivals. But you pays for what you get, and keeping this in mind the Big Alternative Scroller is not a bad deal. The software is available by mail order direct from the company, the details of which are listed below. So if it turns you on, have fun, and happy titling.



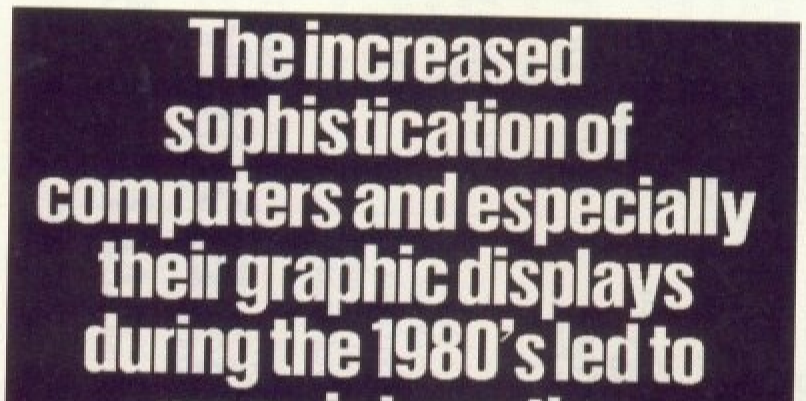
Probably true



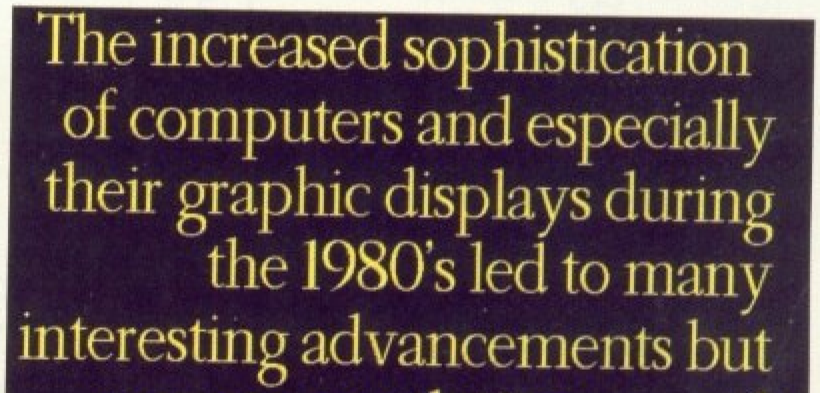
Effects option screen

Alternative Image
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You may require centralised scrolling text



Or perhaps, right justified

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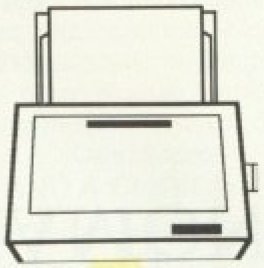
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Go north to VRAM into action

Stevie Kennedy went to Auld Reekie in search of the hottest Amiga technophrase this side of Blitter and came back in a thoroughly buffered frame of mind...

Since the dawn of time, the Amiga has been renowned for its graphical capabilities. Many's the high street that ground to a halt while crowds of Spectrum owners stared open-mouthed and green-eyed at the early NewTek slide show demos, and more than a few Amigas were sold on the strength of those alone.

In the vast sales area lodged firmly below the price range of the standard graphics workstations of the day, the Amiga was for several years the only machine to choose. With its 4096 colours and all-singing all-dancing dedicated chip set, it threatened to blow the opposition away.

There remained just one problem in the early days – software imported from the States was often much more expensive than the machine itself, and that's where Amiga Centre Scotland scrolls smoothly into view (one pixel at a time, mind...).

Situated in an altogether unimposing old building in a small alleyway in the 'new' or 18th century quarter of Edinburgh, its position is given away only by a rather plain sign. The Centre has an air, paradoxically when you consider the business it's in, of aloof 'old worldiness'.

This impression is sustained as you enter by the slightly tatty door, and up the narrow stairs to the offices, which are untidy, paper-strewn, and bulging at the seams.

However, it takes only a few minutes of listening to the staff answer 'phone queries, casting an eye over some of the very tasty, and very complex, applications software on offer, and drinking their fiendishly strong coffee, to dispel the notion that ACS is anything other than on the ball.

A place like this requires a certain amount of extra-curricular activity on the part of the staff and in my short time at the Centre, it became obvious that dedication to the job – and the Amiga was not in short supply. You could smell a faint but lingering odour of midnight oil. So how did the Centre get off the ground?

In the beginning...

According to Martin Lowe, founder of the company, they were horrified at the prices being asked for Amiga software and, rather than sit around moaning about it, they decided to go into distribution for themselves. The first package they handled was Ray Tracer (from whence came the famous Juggler demo) and it was by this happy chance that the Centre's interest in graphics began.

ACS's first big success however, was with Sculpt 3D – forerunner of Sculpt 4D – the package behind many of the most impressive rendered graphics seen on the Amiga. Sculpt' took off like no space shuttle ever has, quickly and impressively, and firmly established ACS as one of the country's leading graphics software sales and support dealers.

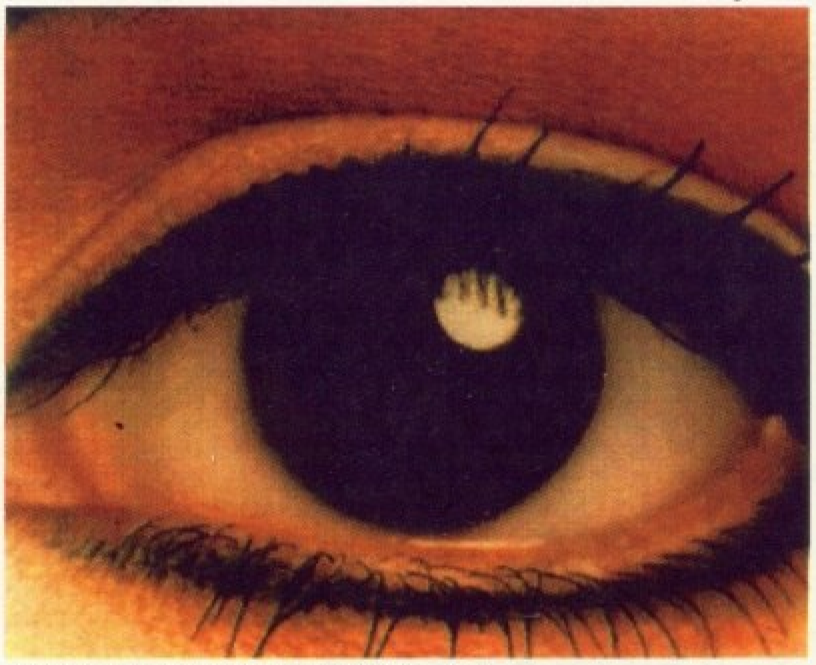
And note the word 'support'. It can often mean, when you 'phone for help, listening to someone stammer through a portion of the manual, and that simply increases your confusion. ACS, however, offers an educated ear to all calls for help. They don't cover zillions of applications, but as Martin said, "you have to be a bit exclusive to answer those sort of questions".

So far so profitable. The Centre was making money - if not exactly fortunes - and was building a name for quality, but none of this is exactly philanthropical, nor beyond what many other retailers offer. It was the Centre's next move which elevated it above the masses when it launched its first annual Amiga animation competition to coincide with the 1988 Edinburgh Festival.

From not much more than a dozen or so entrants in '88, the competition this year attracted over 40 top quality animations, some already edited to video tape, the best of which set new standards for the machine, and one of which helped prize-winner Jason Gee to land a job with Walt Disney.

Now several companies, including Commodore, have approached the Centre with a view to sponsoring the competition, and there are plans afoot to split it into various categories to give mere mortals a chance of glory, thus widening its appeal to the average Amiga owner.

With increased backing, proper advertising, and the Centre's reputation behind it, the competition



Stunning photo-realism is possible with 24-bit colour

can only improve on its initial success to become an important show-piece for Amiga graphics. You can be sure ACS is looking to increase long term profits from it as well, indeed animation on the Amiga is now becoming big business, with several dedicated software packages already available or due for imminent release.

Amiga Centre Scotland can justifiably take pride in its contribution to this particular area of excellence.

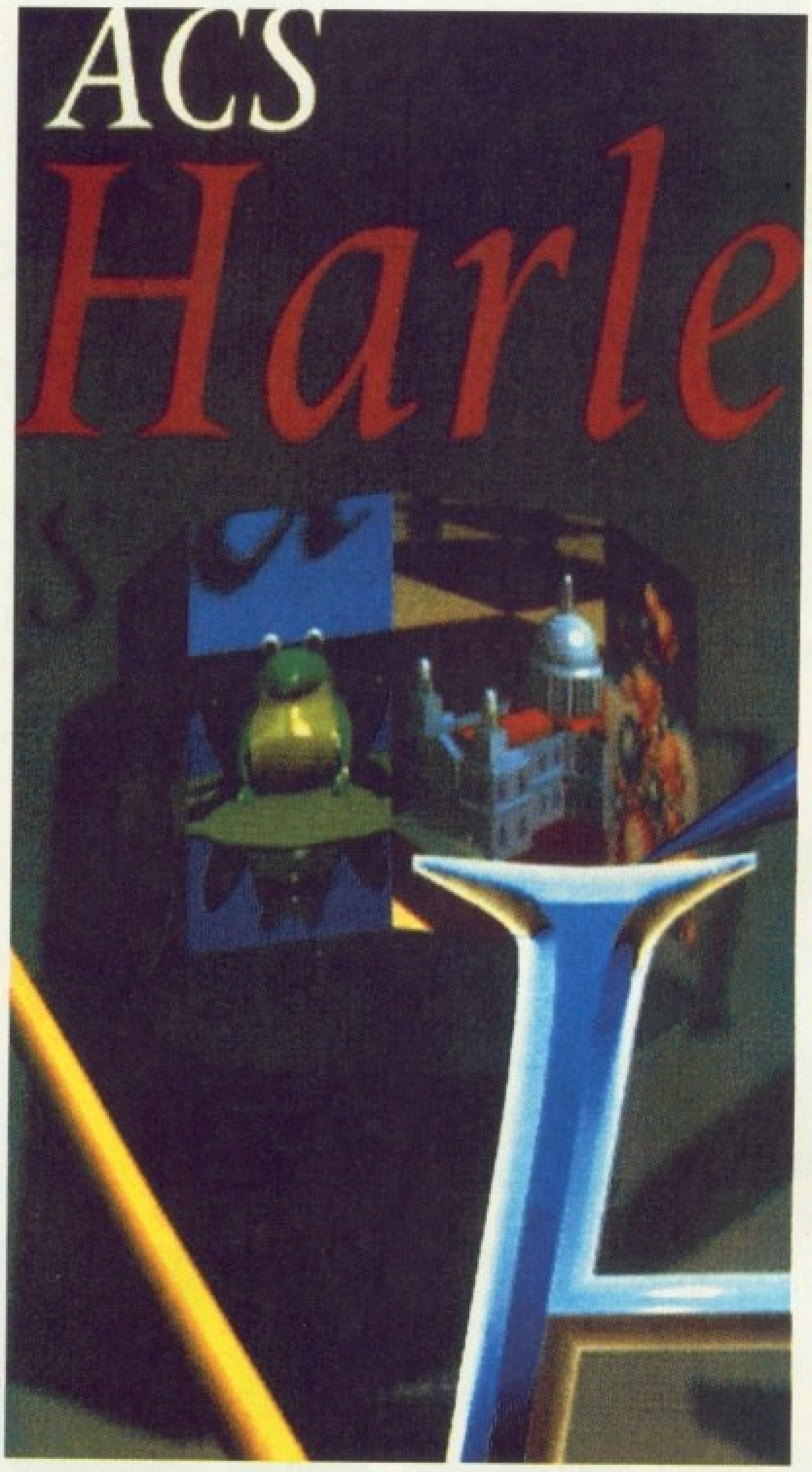
Leading edge

By now you shouldn't be surprised to learn that the Centre is at the forefront of the 24-bit revolution, having developed its first own brand product in the shape of the Harlequin 32-bit frame buffer. The card was announced last year, along with about a dozen other cards from various manufacturers (yet to be released).

Harlequin is now completed, save for final testing – they put it in ovens at 170 degrees! – and the writing of manuals, and should be available to the public in January.

Frame buffers are strange beasts. You'd think that with the spectacular results they produce, the cards themselves would be a little more interesting to look at, but they're basically huge wodges of video RAM with a few clever tricky bits added on, and some don't even have many of those.

Harlequin however, is quite well endowed with goodies, apart from being built like a piece of vital avionics, and comes with 8 bits over the odds as a start.



The extra bits constitute the card's biggest selling point. This is because there is a lot more to usable 24-bit graphics than just the graphics signal on its own. Think of it this way - a television studio beaming pictures to the world is all very well, but without properly tuned TV sets to pick up the signal, and without a standard by which those signals can be encoded in the first place, the studio is wasting its time.

With Harlequin you get the opportunity to do all of this via an 'alpha channel', allowing for, among other things, linear keying. This as opposed to digital keying, is the process whereby instead of just plonking the computer image on top of an external video source – digital keying – the computer graphic can be smoothed in over up to 256 levels of anti-aliasing.

In this way, titles of broadcast quality can be added to any external video source, and the dreaded 'jaggies' avoided. This feature has to be exploited by the software, of course, and at the moment there are no commercial packages which can take advantage of Harlequin's extra bits. There are plenty which support 24-bit graphics (Sculpt and the excellent Real 3D spring to mind), but as they were developed before Harlequin, they can't be blamed for not supporting more than the 24-bit standard.

Harlequin offers several other features, including its own on-board Sync Pulse Generator (SPG). For the purposes of genlocking and the board's use in broadcasting, it is essential that external equipment can synchronise itself with the signals being output, and that Harlequin keeps itself in time.

To do this, the Amiga's CPU already offers an external sync pulse, which explains the proliferation of genlocks now available, but this, claims Martin Lowe, is inadequate for the professional user.

Harlequin's SPG will provide timings down to a few nanoseconds, and is well within the specifications set down by PAL. Indeed, the output is good enough that PAL encoding can be entrusted to a modified Commodore 520 TV modulator, although professionals will no doubt expect to pay a bit more for broadcast quality encoding.

On the standard Harlequin 2000 board you'll find genlocking output signals, a standard digital keying signal, software switching for interlace mode and a maximum resolution of 910 x 576 pixels, which should be good enough for most users.

The long and the short of it is that even in its basic configuration, Harlequin can receive and output to external video sources, the highest quality images available on any Amiga, which means the highest quality images available in its price bracket.

Up and running

With Amiga software such as Sculpt-Animate, Real 3D, and Turbo Silver retailing for a fraction of the cost of comparable software on other machines, and the amount of work going on already in the graphics field, the Amiga is obviously the perfect host for the board.

Harlequin will do some breathtaking things. The frog picture, for instance, is overlaid with several standard Amiga graphics screens, just to highlight the difference between these and 24-bit imagery, and the naturalist in the top right hand corner, although we obviously can't show it, is running in real time 32-bit animation (presumably in an attempt to keep warm).

The board itself sports anything from 1.5 to 4MB of VRAM. It's the board's use of Video RAM which to a large extent determines its price. VRAM is faster and altogether superior to the far cheaper DRAM used in the board's prototype, and is essential for advanced and professional applications.

There would be little point in using such a board if it was slow and frustrating to use because the manufacturers had skimped on the quality of materials used. You'll need at least 3MB of this VRAM for double buffering, as each screen

takes up more than one full megabyte.

The usefulness of double buffering to professional users can't be overstated. If you're seriously into animation, it's more than handy to have instant access to two consecutive frames of a series.

In this way you can ensure that one carries on smoothly from the other and, to allow this as easily as possible, Harlequin will store them both and allow you to flip instantly between them using a software switch.

Again, you need an extra 512K to accommodate the alpha channel, vital if you are to utilise linear keying, so that to get the most from Harlequin you have to splash out a hefty £2064 for the 4000 model. Did I forget to mention that a Mac or PC with 24-bit colour can set you back in excess of £7000?

There are drawbacks of course, and the above price is one of them. Harlequin is aimed at the professional user, so we shouldn't expect home user prices.

However, the board may find the competition a bit stiff when it comes up against some of the cheap boards available on the Mac, which retail for less than £1000. Admittedly, Harlequin is of a higher specification than such



Unlike the above, Harlequin actually works

boards, and it is the first of its kind on the Amiga, but smaller users, such as independent video producers, may baulk at the required outlay and settle for less.

Again, ACS recommend the use of an accelerator board with 32-bit memory, as this speeds up considerably the process of transferring images from Amiga to Harlequin and will vastly improve the performance of the software you use – particularly in the case of ray-tracing and rendering packages.

A large fast hard drive is also a necessity for efficiently storing and accessing the huge 24-bit picture files used by Harlequin, bringing the total cost of an up-and-running system perilously high. High, that is, when compared to the average Amiga owner's pocket and the kind of semi-pro video systems presently being used on the machine.

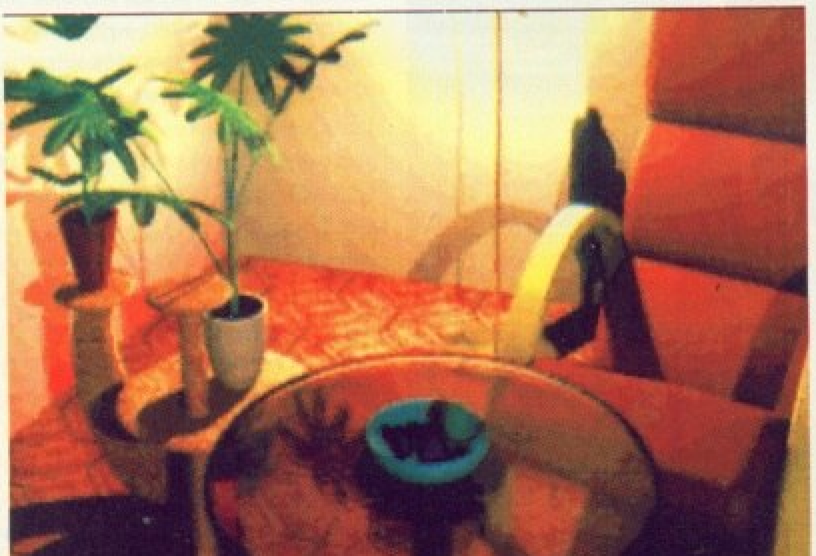
For the prospective professional, lumbered with the cost of tens of thousands of pounds worth of graphics workstations and broadcast quality imagery, the thought of an Amiga 3000 with a Harlequin board, genlock, and PAL encoder attached, will surely carry a great appeal.

And tomorrow?

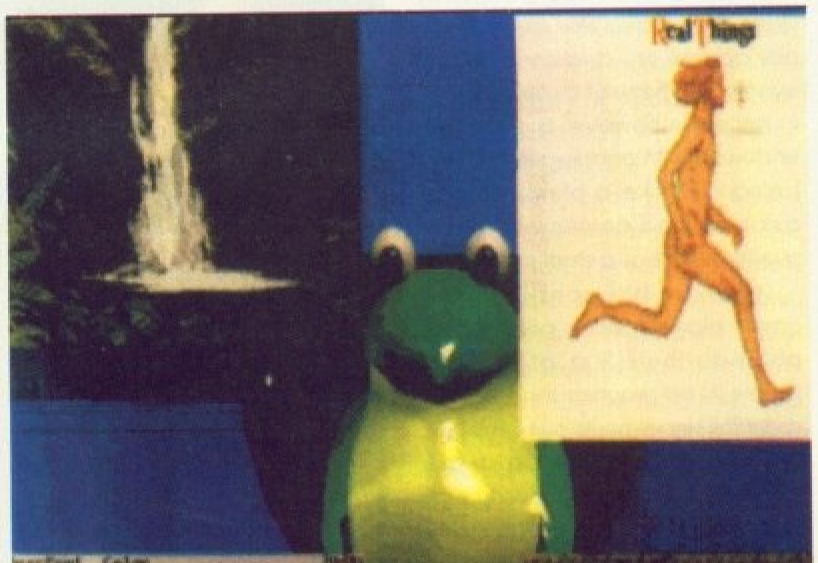
It has long been a favourite forecast in the computer industry that hitherto unattainable applications will soon be freely available to the home user, and in the case of top-quality graphics, Harlequin promises to bring that particular goal a lot closer.

"The next six months", say ACS, "will see what will effectively be a revolution in Amiga 24-bit graphics, in everything from paint packages to frame buffers".

If that's true, I have no doubt that Amiga Centre Scotland and the Harlequin board will be in the vanguard of the assault and will have contributed a great deal before the 16 million-coloured flag flies over the 16-bit Bastille.



A designer's dream: Hi-res 16 million coloured interiors.



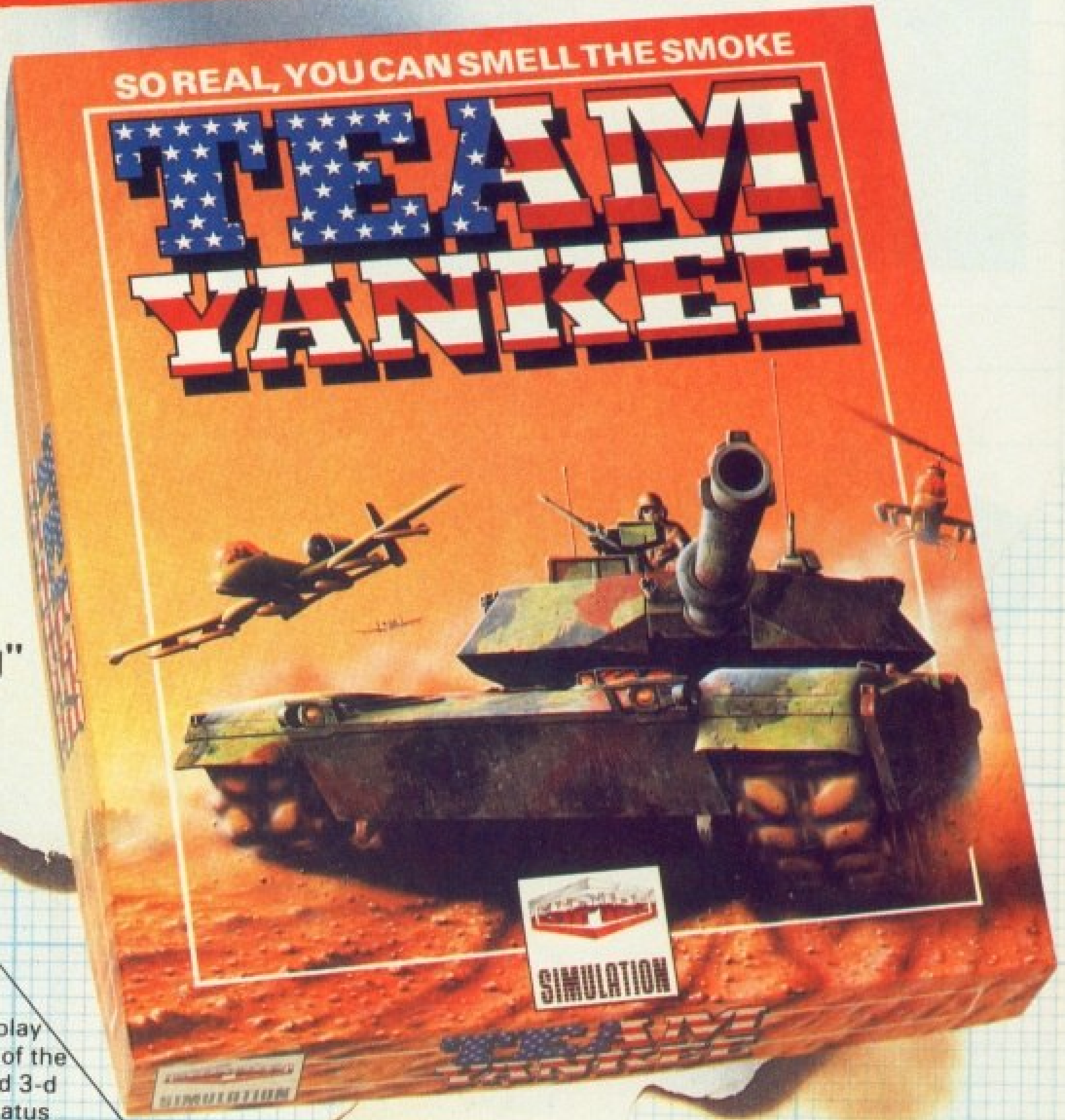
Kermit goes 24-bit

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Capt. Sean Bannon snapped his head to the left. There was only one place where the Russians could be, and that was on the hill 2200 metres away. All the training, planning and preparations were over. Team Yankee was about to learn if the team's seventy nine men and twenty five million dollars worth of equipment could do what they were supposed to do.

"Superbly entertaining" – *Amiga Computing*

Team Yankee is designed to test your leadership and tactical skills to the quick. You can display in either **"quadrant mode"** where all four platoons may be controlled at once **or** **Full-screen Mode** where the display homes in on just one platoon.





You have the flexibility to display either an overhead map view of the surrounding area, a simulated 3-d view of the battlefield, or a status screen showing the performance of all vehicles in a platoon. Irrespective of which screen mode you choose during battle, there is a constant column of information to the right of the screen.

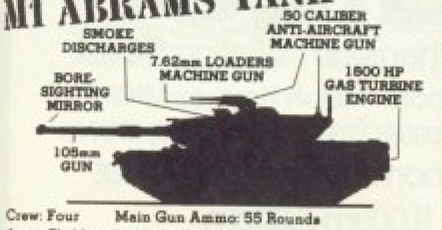
To the right of the compasses are the icons which represent the various types of weaponry available to the unit:

- **MACHINE GUN** - which is always available to the player and has an 'infinite' number of rounds.
- **SMOKE** - a smoke grenade which allows enemy vision to be obscured.
- **HEAT** - a high explosive anti-tank round
- **SABOT** - an armor-piercing tungsten shell
- **TOW** - a high-range anti-tank missile

The major capability on the quadrant map screen is to alter the movement and formation of any platoon. The whole of the map may be viewed at once, or you may zoom into any portion of the battlefield using the icons to the right of the map.



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Team Yankee is the definitive action simulation of modern tank warfare. Watch scenarios unfold on 3D battlefields with high definition graphics and keep track of the four tank platoons you control using the unique 4 quadrant display. Defend Hill 214 from Yuri Potecknov's crack tank platoons, attack Objective Link through sniper fire from forests, protect the Langen Gap from an entire Soviet tank battalion at night!

Five major scenarios based on the battles featured in the New York Times No. 1 best seller Team Yankee.



Engine smoke This will prove very useful in confusing your enemy if you find yourself in a tight corner.

Rotation icon and compass display.

Infra red (or thermal) **imaging** This feature is very useful for identifying vehicles camouflaged on the edge of forests. Contary to popular belief the thermal image is green and not red.

Zoom. When this icon is accessed the central portion of the screen is magnified by a factor of 10.

Laser range finder. The range finder will lock on to a reflective target if the firing cursor is placed directly over the object.



Wide formation icon. This increases the spacing between vehicles in your platoon to 100 metres.

Narrow formation icon. This reduces the inter-vehicle spacing in your platoon to 50 metres.

Vee. a vee formation.

Echelon left - places your vehicles on a right to left diagonal relative to your direction.

Wedge - places your vehicles in a wedge formation.

Scroll icon: The four arrows underneath the ETA display allow you to scroll your map in any of the four directions.

Dead Stop icon. This red icon, causes your platoon to come to a dead halt when clicked.

In line - places your vehicles in a line abreast relative to your direction.

Column - places your vehicles in a line ahead relative to your direction.

Echelon right - places your vehicles on a left to right diagonal relative to your direction.

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Digital Dreams

My first reaction to books of this kind is 'another cobbled together collection of short stories only loosely related to their purported subject matter and each other – in short, an exercise in deceased equine flagellation'. Not so with Digital Dreams.

Initially, the book grabs your attention by proudly displaying Terry Pratchett, well-known author of the Disc World novels, on the front cover, but it continues to please through means far more substantial than mere banner waving.

Digital Dreams is a collection of new stories from authors both experienced and inexperienced, and contains material from some never before published.

In addition, editor David Barrett takes pains to stress that all of the contributions were commissioned specially for the book and have appeared nowhere else, thereby shrugging off the 'anthology' stigma even though it claims to be 'the first all-British anthology of computer stories'.

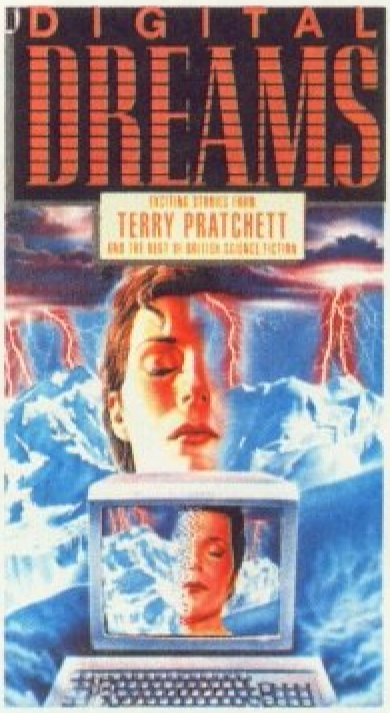
This reassured me that the book was a legitimate approach to computer-orientated fiction, however, I remained sceptical.

The best sci-fi is always that which uses its medium and the strangeness of its settings to test humanity's strengths and weaknesses to their limits. It was in the hope that Digital Dreams might manage this, and at the same time address important moral concerns, that I continued my literary foray.

I was pleased and disappointed in almost equal measure. The collection sports a few real gems and several very good attempts, but I couldn't help feeling that somewhere along the line an opportunity had been missed.

As science fiction all of the stories work well, although some tend to dwell on rather mined-out themes, but as specifically computer-based stories they fall short of the target in places.

Some of the contributions raise very important issues, such as the moral treatment of artificial intelligences, and the dangers of too close an interface between man in his 'real' world and the computer in its world of virtual reality. For instance, you may find yourself wondering how long it will be until you are legally constrained



in the way you may treat your comuter, or whether it really is advisable to allow the further development of the human to computer interface. When the collection prompts these questions it is working at its best.

There are also some very quoteworthy statements to be found on the computer in general, such as Michael Fearn's "A computer is just a tool ... Like any other tool, it amplifies human effort. If the knowledge is not there, it can only amplify ignorance".

However, these moments are not quite as frequent as I would have liked. Most of the time one is treated to a good read, and Digital Dreams deserves to succeed on this basis alone.

Sadly, I was disappointed to find fewer original and thought-provoking ideas than I had anticipated, and I believe this is enough to rob the collection of the uniqueness to which it aspires.

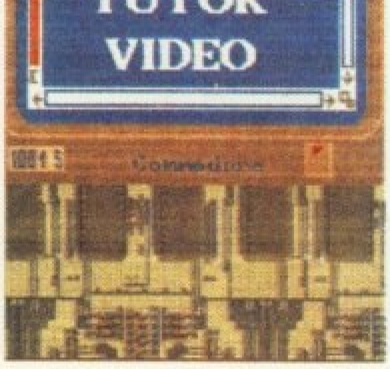
Digital Dreams
Publisher: New English Library Price: £4.50

The Amiga Tutor Video

Are you about to drop kick your Amiga through the nearest window? Does the expression 'Command Line Interface' make you feel physically sick? Has your dream machine turned into a nightmare of tangled wires and frustration? If so, I may have the answer to your computing prayers.

The Amiga Tutorial Video offers a simple answer to some very tricky problems. For the average beginner the first few days of Amiga ownership are definitely the worst. The manuals can be somewhat less than friendly, the disks complicated and confusing. It's all too easy to slip Workbench to the back of your disk box and dive straight into the games.

At this point everyone needs a helping hand. If you're lucky there'll be a friend, who can cut hours down to minutes by simply pointing you in the right direction. However, if you are all alone in the computing wilderness the temptation to reach for Kick-Off 2 may just be too much. Don't despair, help is at hand! The video



gives a complete guide to setting up, plus a brief tutorial on the machine's operating system. The section devoted to setting up seems very pedestrian when viewed by an old Amiga buff, but there again it's not meant for experts.

Some of the other topics include a tutorial for Workbench and it's component parts - disk operation, directory structure, CLI, Shell, startup-sequences, multi-tasking, setting up printers, installing a boot disk, using RAM, plus general information on viruses and how to avoid them.

If you don't want to watch a particular section it's possible to skip around various sections by using the tape counter index provided. This can be very useful considering that in its entirety the tape runs for an hour and a half.

Do you fall into the bracket of the bored games player, who in the past perhaps dabbled with the CLI and Workbench. If so, the video could be well worthwhile as a refresher course, and may even teach an old dog a few new tricks.

Perhaps there was a chapter of the manual you never quite got around to, or maybe a certain subject that you never quite managed to grasp. Here's your chance to have it all explained in glorious moving colour.

I found the video excellent. Certainly for anyone taking their first Amiga steps it's well worth the £19.99 asking price. If only such a thing was available in my formative years, many a grey hair (you should see his rapidly whitening topnot – Ed), and sleepless night just might have been avoided.

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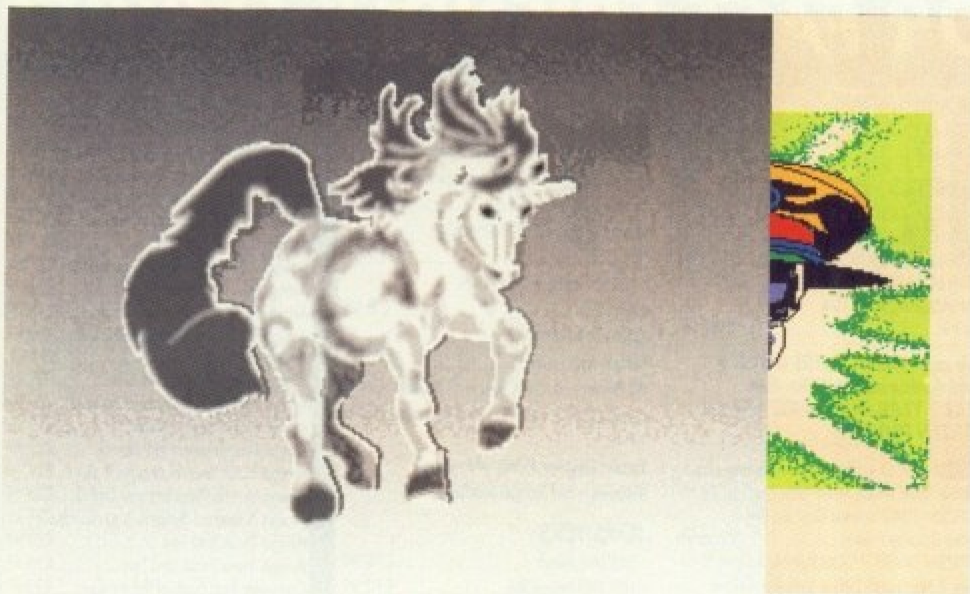
'STracer'
Steaven Heppener,
Elland



'Magnette'
Steaven Heppener,
Elland



'So Ends The War' Paul Franklin, Davenham



'Unicorn' R.A.G Finlay, Silverend



'Birdman' Chris Hill, Hemel Hempstead



'Out of the Storm' Paul Franklin, Davenham



(untitled) Quentin Walker, Ipswich

the Gallery

We have a wide variety of styles and artwork for you this month and the quality remains as high as ever. Remember, we welcome all submissions, especially if you've never exhibited before. P.S: Will the guy who sent in the disk containing 'Last Duty' (you know who you are) please get in touch as I think I've lost the original (you're fired! - Ed).

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Public domain

Stewart C Russell lays hands on yet another load of lovely free software

Diagnosis Time

Do you really know what's going on inside your Amiga? What tasks take up the most processor time? What fonts you have loaded? How many libraries are hanging about unnecessarily? Whether anything is lurking in the background that ought not to be there?

The tools on the Amiga Extras disk are nothing more than toys and tell you nothing useful about the state of the system. You could have a totally obvious virus loitering with intent in the Reset Vectors, and the Extras tools would carry on regardless. That's why you need a system monitor.

Sure, there's nothing better for throwing a screenful of hex at you, but there's plenty of useful info in there. And in the crashing stakes, a system monitor in the wrong hands is hard to beat.

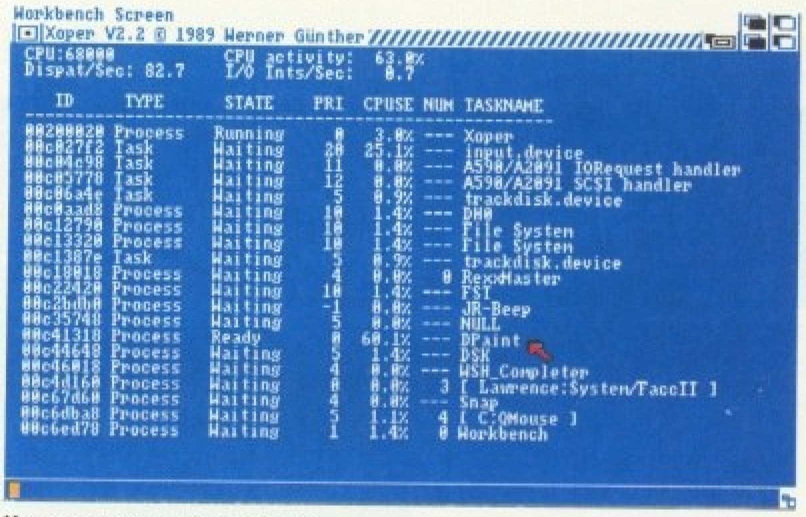
There are two freely distributable monitors which are worthwhile, Xoper and ARTM. People tend to stick with one, and slag the other mercilessly. Xoper's been around for a very long time indeed, gaining new features on the way, but it's still very much a keyboard driven device. ARTM is newer, and can be controlled entirely by the mouse.

There are plenty of ways to mess about with ARTM without crashing the system. ARTM, by the way, stands for Amiga Realtime Monitor (dunno what Xoper stands for...).

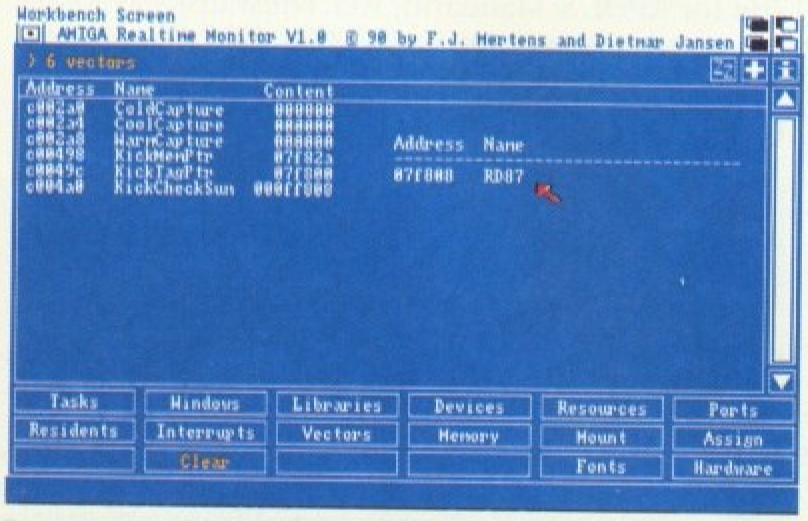
Starting off both programs, you get the standard list of tasks running. Even on a stock machine, there's a huge number going at once. If you want to remove a task with ARTM, just two mouse clicks and it's gone. Xoper requires "Kill TaskName" to be typed to have the same effect. As you can imagine, it's not a great plan to remove a task that's doing something useful, like Workbench.

Ever had a program die, leaving its window grinning inanely at you? ARTM can list, change and close just about anything window-shaped. Xoper's pretty much confined to closing windows. Again, it's not a wildly wonderful idea to close a window still being used by a program. Watch that LED flash!

The 'Residents' is a list of all the resident routines beavering away in the background. Some under-



Xoper covers a multitude of Tasks



This could have been a virus, but ARTM shows it's a harmless RAMDisk

cover viruses can lurk here, so both programs list all resident names and addresses.

The most common way for a virus to spread is by grabbing hold of part of the system which deals with warm resets. Useful programs – such as recoverable RAM disks – can also hold these system vectors. Unlike those dumb vector check programs which clear anything strange, ARTM and Xoper will detail exactly what is holding which vector.

The rest of the functions are mostly useful to programmers, who want to make sure that their program runs as expected and cleans up nicely after itself. ARTM's strong point is that it can show every piece of allocated memory.

Xoper can unlock redundant Dos Locks. These are the things which sometimes cause a disk icon to linger on the Workbench screen after the disk has been removed.

The authors of ARTM seem to be a little confused. The program has a message saying it's in the public domain, but then the authors ask for a shareware fee if you use it. Weird! Public domain means free of charge. Xoper V2.2 by Werner Günther is on Fish Disk 318, while ARTM 1.0 by F J Mertens and Dietmar Jansen is on Fish Disk 327.

ARTM is much easier to use but requires a little more work since it has been known to crash occasionally. Xoper is stable but not as cute as ARTM. Take your pick but remember, Xoper's free.

Dis

Programming on a low budget isn't easy. You don't get what you don't pay for. Instead of having a nice integrated environment you usually have to make do with a collection of separate tools for each individual task.

On an Amiga, that's not too much of a problem. You can have several CLI windows open at once, with a different task in each, completely eliminating the edit, quit, compile, edit cycle from which the PC suffers.

Also, freeware programs tend to be written for a very specific reason. The programmer needed to do something that no other software could offer, so they brewed their own. Although this means

Badger

People forget things. It's a fact of life. That's why there's such a large market for diaries, personal organisers and small electronic things that beep at the slightest opportunity. The trouble with all those things is that I forget where I put them.

Computers, on the other hand, are wonderful at remembering things. Given a nice cool, clean, dry area, free from magnetic fields and other nasties, a computer disk will 'remember' forever.

Given a way of automatically retrieving the information, we've got a great way of having all the little details of out hum-drum lives remembered for us.

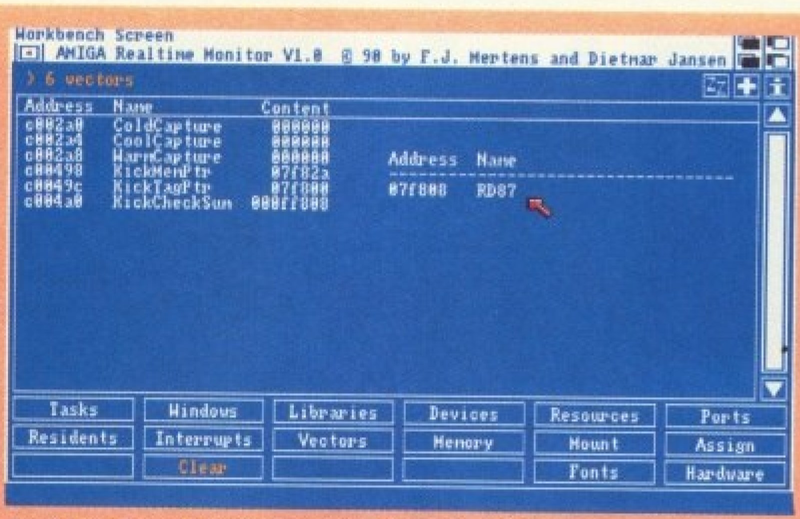
George Kerber's Badger is a great electronic memory aid. Not just remembering all the events you could wish for, it allows you to prioritise them.

You may, for example, have a large project that takes a month, and a small assignment that takes an evening. You'd want at least five weeks warning for the project – since people always work at the last minute – and maybe a week for the assignment. Just enter the final dates and the advance warning period, and Badger's in business.

Unless you're in an advance warning period, Badger will keep quiet about an event, but it will show everything you've planned if you ask it. The version of Badger that lives on Fish Disk 365 is a fully working demonstration of the non-distributable version, which Mr. Kerber sells for $15.

You have several weeks to evaluate this program, and then data files are deleted. You need a real-time clock to run Badger. In fact, if Badger detects a gross change in the clock, it will delete its data (in this version) to prevent fraudulent use.

I know about this. My real-time clock chip failed while reviewing Badger. Did it complain, or what? Forgotten birthdays and anniversaries are a thing of the past with Badger. That's assuming you remember where your Amiga is!



Don't get sett in your ways – keep track of your life with Badger

that the software is often very powerful, it also means that it can lack a little in the user friendliness stakes.

Dis, on Fish Disk 240, is an excellent example of this. It's a symbolic disassembler of awesome power. That means it will scan through the code looking for branches and jumps, build up a reference table, and output code which looks the same as the code produced by an assembler.

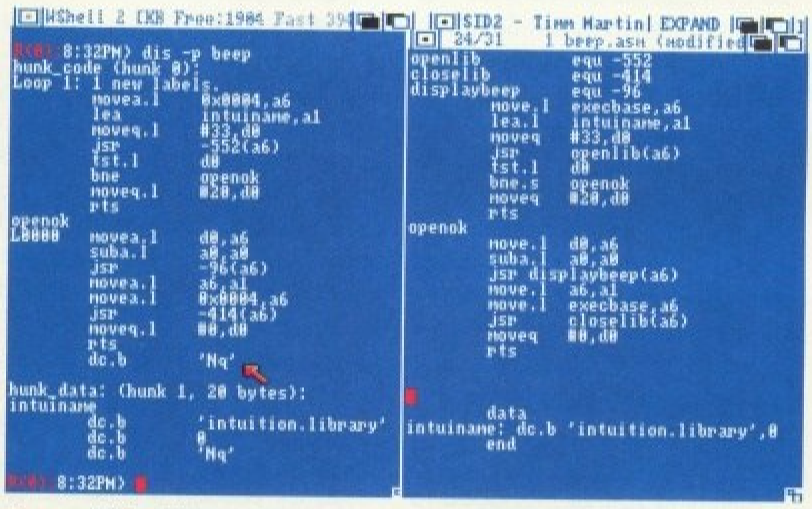
A program disassembled with Dis will usually reassemble back to its original form with very little work. Most commercial disassemblers claim they can do that, but I've only met one that does anything like Dis.

The program is able to disassemble just about anything. It takes object files, executables and even libraries, and produces labelled, indented code, supporting 68020 and 68030 processors, and Motorola FPU and MMU chips.

If you tell Dis that it's looking at a library, you'll get a few comments in the listing outlining the library's structure. This is a very clever program.

So what would you use Dis for? Well, the only freeware machine code monitor for the Amiga – Timo Rossi's Mon, now at version 1.29 – isn't symbolic, so output can be a little hard to follow at times.

If you're examining code that you didn't write, you need all the help you can get. Dis was written by Chris Gray, who designed and wrote the language Draco. It was meant as an add-in for his compiler system, but works perfectly well on its own. Just the thing for a spot of software reverse-engineering, which may soon become an offence if European legislation goes through.



Can you tell the difference between the source and Dis's disassembly?

Climb the family tree

Some believe that there are only three questions in life, "Where did I come from?", "Who Am I ?' and "Jeremy Beadle, why?". The last one is impossible to answer, but the first two are relatively simple and can be answered with an Ordinance Survey map and a family tree.

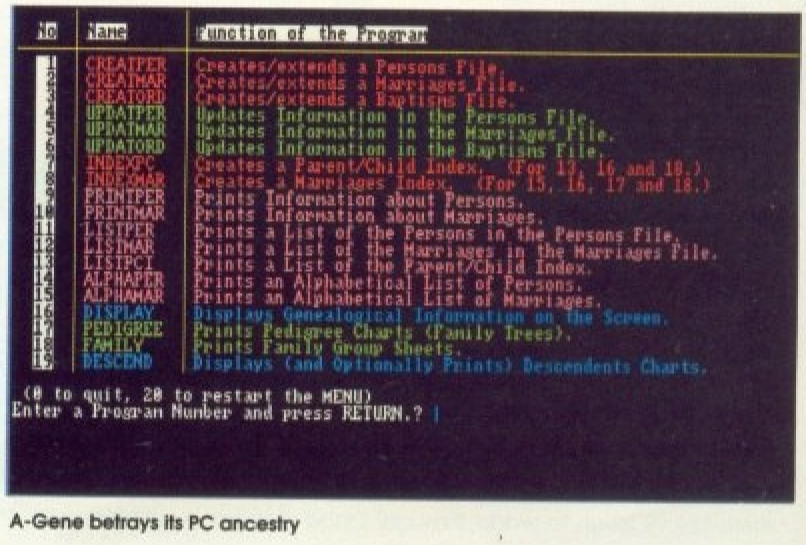
Charting who your ancestors were is an interesting pastime, and one which a surprising number of otherwise perfectly normal folk are interested in. What better way to remember vital facts than let a computer do the tedious cataloguing? There are two genealogy packages for the Amiga. One is very easy to use, but also incredibly easy to get lost in and mess up your entire family. The other is a direct port of a PC database, and has all the friendliness of a mainframe operator after another night's batch jobs have snarled up.

PeopleTree is pretty straightforward. All it needs is a name, the sex, parents and any children. You can add birth and death dates if you have them, but it's not essential.

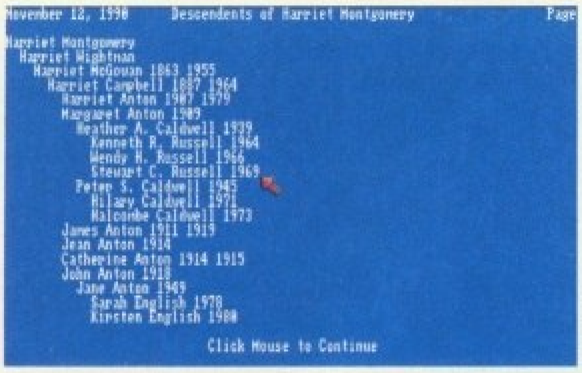
The program has a look around, and tries to resolve as many family links as it can. Any links it can't make, it asks you about. This continues until Peopletree is happy with all the links you've given it. You can save out the family data at any time, and then add notes about each person.

Output is limited to simple pedigree charts, but the tree can be browsed simply. Had this program been written in the last year, it would have had Hyper in its name somewhere.

That's all there is to PeopleTree. It doesn't ever reference people by numbers but then it won't



A-Gene betrays its PC ancestry



PeopleTree showing just a few of my ancestors to the (Great^4) level



Peopletree can't handle too many children - eight is the maximum

cope with huge families, 8 children per mother is the maximum.

PeopleTree is on JumpDisk June 1989 issue, which is a well produced American disk magazine handled by George Thompson Services in this country.

A-Gene is totally different, everyone's a number in this program. On the minimum configuration of a 1Mb twin-drive Amiga, it can handle 2500 people. It won't be very quick at this size of database, but at least it is able to handle it.

This is no simple program for genealogical dabblers. It's big and it's frightening. A-Gene is based on Genealogy on Display for the PC, which was designed for use by members of The Church of Latter Day Saints (Mormons). You actually get two versions, the Anglican and the Mormon, the latter can cope with more data.

Family data has to be reasonably well ordered for the program to work. This was my first problem since my previous filing system was an old Samsonite stuffed almost to bursting with loose-leaf A4. It'd be wise to assign numbers to everyone at this point because parents are indexed by number and not by name.

Assuming you've managed to wade through that, you're ready to tackle the Marriage section. This is pretty much a case of joining two people together by numbers. After that you can input baptism – or ordinance – data, which can contain brief notes about the family. If there's one place where A-Gene shines, it's in the output. If you want your family grouped, treed or just plain listed, there are several options for each.

A-Gene has the dubious accolade of being so confusing that I was actually quite pleased when it suffered a critical stack error and crashed. PeopleTree is very lightweight, but is easy to use and can cope with poor organisation. Unless you're serious about your family, PeopleTree is for you.

Phone phun!

Can you remember the telephone number of everyone you know? I can't, so I usually have to resort to my Little Black Book of names. But as with all address books, my Little Black Book can tell when it's wanted, and manages to hide such that I can never find it.

What I need is a program to Marshal those numbers in such a manner that I can always find them. And I want the computer to dial the number too. Automatic dialling? Not as silly as it sounds. There's a tiny program called Phone which generates the tone-dialling sequence through the monitor's speaker.

So all you do is pick up the phone, type Phone followed by the number, put the phone to the monitor speaker, hit Return, and the number's dialled. Phone's not without problems though. It's only to be found on a few bulletin boards, and I doubt whether it's in any PD library. You have to remember the phone number, so the Little Black Book is still required. It only works on digital exchanges, as it's impossible to generate the old dialling clicks without connecting a relay to your Amiga – and that breaks your BT licence agreement and probably your Amiga.

You may actually have a digital telephone exchange without knowing it. I discovered mine by accidentally setting up an autodial modem to tone dial and it actually worked. BT weren't sure about it either – maybe a digital exchange grew in overnight. A modem is a good way of dialling numbers. They've



Hyperdialer may dial for you, but you still have to talk to the answering machine

got all the right circuitry, and unlike the Little Black Book they're firmly RS-232'd to the back of your computer.

HyperDialer uses the modem to do the dialling, concentrating on being user-friendly. It doesn't need much in the way of instructions, you simply load it and go.

You can input the name, address and up to two telephone numbers for each person. Names can be sorted, deleted, and saved to a data file which is automatically loaded when HyperDialer starts. It's a pity you can't use the address data to print address labels, but Little Black Books can't do that either.

Even though autodial modems usually support pulse dialling, HyperDialer only supports digital tone dial. It would be really easy to fix this – wander through it with NewZap, changing all occurrences of ATDT to ATDP – but David Plummer, the author, is American, where 99.9% of the phones are tone dial anyway.

If you've got a Hayes compatible modem, HyperDialer may help to keep you sane. It's on Fish Disk 367 and has a shareware fee of $15.

Tricky

Tricky's a neat little game which requires a deal of concentration, a large wad of logic, and the ability not to panic when things start getting frantic. Your job is to send a Boing ball through a maze, clearing up tiles as you go. Enough yawning, it's more complex – and more interesting – than that.

Once you've actually set that ball rolling, there's nothing you can do to control it. The ball bowls along a rack, clearing away tiles as it rolls over them, and is deflected by arrow tiles which have been carefully set up by the player. Care is required when moving the arrows, as there's only a limited number of adjustments allowed per game.

There's more. The ball will only clear up tiles of the same type as displayed on an indicator. If you hit a different tile, the ball stops, and you have to bowl again. If you get badly stuck you can play a Joker, which allows you to go for any flavour of tile you like.

The object is to clear away all but three (or less) of the tiles within a fairly tight time limit. Everything starts off simply, but very quickly gets very difficult. And there are 99 levels to wade through. Once you get the hang of what's going on, Tricky becomes seriously enjoyable, and capable of doing some industrial-strength whiling away of long winter evenings. If you do manage to get bored with Tricky, you can design new screens using the game editor. The possibilities for making impossible screens are near enough endless.

Peter Händel has written quite a few games for the Amiga, all of them simple, but all of them good. I think Tricky's his best, though. Try it, it's freeware, and on Fish Disk 367.



It's Tricky – but easy when you know how

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First Time Buyer!

Clutching a bank roll that would choke a donkey, Eddie McKendrick ventures out into the High Street to dig up the best in Commodore silicon

Being a computer enthusiast was once considered freakish. These days it's positively fashionable to be sporting the latest model of your chosen machine – a computer with plenty of power under its silicon bonnet.

Commodore has progressively developed the Amiga into a complete range, with everything from a Popular to an impressive GTI to be found on the hardware forecourt.

But just like cars, the engine remains the same for most of the machines. It's the gizmos and add-ons that gives each Amiga its unique position within the line-up.

Another parallel between the computer and car industries is the abundance of hype and rumour surrounding the launch of new models and phasing out of old ones.

There are more Amigas to choose from than ever before. If you haven't taken the plunge and invested in Amiga technology yet, or if you are looking to upgrade, a whistle-stop tour of the Amiga family might help you make up your mind up.

AMIGA 1000

When the Amiga first came to these shores, there was only one to choose from. Not the Amiga 1 as you might imagine, not even the Amiga 500, but instead the Amiga 1000.

A very impressive machine when it arrived in the UK four years ago, the 1000 bore a close resemblance technically, to today's 500.

It's physical styling was, however, completely different to what people have come to expect an Amiga to look like. Instead of the familiar vanilla that most Amigas sport, it was white.

The 1000 had the infamous Amiga 'PAD' custom chip set (Paula, Agnus, Denise). Then, just as now, that's what put the Amiga ahead of the competition.

But it's more than just the box which distances the 1000 from the current Amiga range. All modern Amigas have their kernel operating system on something called a 'Kickstart' ROM. This contains various libraries used by AmigaDOS and Workbench.

It is Kickstart which produces the picture of a hand holding a Workbench disk if you boot an Amiga without a system disk in the drive. The 1000 did not have Kickstart and, therefore, to load software – even Workbench – a Kickstart floppy had to be inserted first.

Even today, dealers are still advertising and selling Amiga 1000s. The machine is no longer manufactured and you should not be fooled by its number, the 500 is a significantly more impressive beast. If you buy a 1000 you're at best investing in a piece of computing history. It will run most O/S legal software, but don't expect hardware add-ons to work.

Equally, you can rule out running any software which indulges in excessive 'metal bashing', as most commercial software does for copy protection. The 1000 is very much the 'Vintage Classic' of the range.

AMIGA 500

Every car range has its base model, the 'Popular'. This is generally the best compromise between price and performance, providing a high value package that is attractive to most people.

The Amiga A500 fits the bill perfectly. Chances are, as a reader of this magazine, you already have an A500 or are thinking about buying one.

When anyone says Amiga, A500 is generally what they mean. In one neat package Commodore has provided a motherboard sporting a 68000 processor backed up by an array of custom chips.

On the drawing board the Amiga was designed as a console rather than a fully fledged home micro – the ultimate games machine.

Fortunately, and to the eternal debt of all Amigaphiles since, Commodore realised the potential of such powerful hardware and added a disk drive, a high quality keyboard and a mouse. The A500 is probably the most expandable computer in its class.



One of the tasty A500 bundles currently availalble

You only have to look at the Atari ST – or even the STE – to see how much thought has gone into the Amiga. Those awfully nice people at Commodore have made sure that whatever you want to plug in, there's a slot for it.

Take, for example, the trap-door underneath the A500. This was designed for the addition of 512K of extra memory. No soldering required, just open the door and slot the expansion module in.

Since then, third party hardware manufacturers have produced a staggering number of devices that can make use of this easy expansion option. It's possible, for example, to fit all the hardware required to convert your Amiga into a PC within that little trap door.

Careful examination of the left-hand side of the A500 will reveal yet another expansion port. This one is for connecting a hard disk drive. Looking at an A500 from behind, every single bit of space is used by sockets offering huge expansion capability.

Very few other machines provide a mouse port, a joystick port, stereo audio connectors, a disk drive port, a serial port, a parallel port, an RGB monitor connector and even a mono video connector.

Proof again that the Amiga is probably the most flexible home computer available.

Like all good base models, the A500 comes in a range of trims. Commodore has been quick to grasp the concept of bundled software, giving you 'something for nothing' when you blow your wad on that dream machine.

The current bundle is known as Screen Gems and provides all buy-



Workhorse of the Amiga range, 2000's an old favourite

ers with the A500 itself and a modulator to convert the machine's RGB video output to UHF, allowing connection to a standard TV instead of an expensive monitor.

The free games software includes Back to the Future II, Days of Thunder, Shadow of the Beast II and Deluxe Paint II.

Previous bundles were Flight of Fantasy, featuring Ocean's smash hit F-29 Retaliator, and the hugely successful Batman pack which featured the Caped Crusaders in a hit game, again from Ocean.

AMIGA 2000

The 2000 is very much the station wagon of the Amiga range. It boasts all the features of the 500 with greatly enhanced expansion capability. Commodore designed the 2000 as a corporate work station, with the dream that it would one day start to replace PCs on desks throughout the world.

The PC connection has been pushed to such an extent that the 2000 has space internally for a PC format 5.25 inch floppy disk drive. Commodore also produced a bridge board for the machine that allows PC applications to be run on the 2000.

The bridge board proved to be much slower than a genuine PC, making the 2000 package unattractive to companies unwilling to abandon any investment they already have in PC hardware.

Needless to say, big business buyers were as complacent as ever, wriggling out of ditching their aged IBM hardware in favour of the more advanced Amiga.

It's true that with the advent of the 80386 and 80486 processors, PCs have got faster, but they are still fundamentally flawed, as one look at their memory architecture will prove to anyone.

The 2000 has taken root in one surprising industry sector though, television graphics. The ITV chart show, Sky News and numerous independent producers all make extensive use of Amigas in the day to day production of graphic sequences.

This can be put down to a combination of the superb graphics facilities the machine supports and the built in Genlock port, enabling the Amiga output to be professionally superimposed over programme video.

The 2000 has seven expansion slots. These are spaces on the motherboard where additional daughter cards can be added – anything from extra hard disks to video or audio digitisers. There is also a co-processor slot, for adding an additional chip to share the load with the Amiga's built in 68000 CPU.

These days the 2000 is supplied with an internal 40Mb hard disk and 1Mb RAM. Positioning it firmly within the serious applications sector.

AMIGA 1500

The latest fledgling from the Amiga stable can be described in one of two ways. Those who like it describe the 1500 as an Amiga 2000 without a hard disk. The remainder are less flattering and prefer to think of it as an Amiga 500 in a bigger box.

The fact is, both factions are correct. The 1500 is the 'special edition' of the Amiga range. It's been designed by Commodore to win over the serious user who can't stretch to a 2000, but could expand to one progressively.

Care should be taken not to confuse the official Commodore Amiga 1500 with the upgrade kit offered by Checkmate Digital Limited.

The CDL kit is used to convert a standard A500 into a separate processor and keyboard system. It looks very nice, but does not offer the expansion of a true Commodore Amiga 1500.

In fairness to CDL it has to be said that Commodore had not allocated the 1500 number when the upgrade kit was brought onto the market.

The 1500 has the same motherboard as the 2000, with two floppy drives as standard, instead of the 2000's single unit. The newly restyled Commodore 1084S colour stereo monitor is also bundled along with productivity software.

What you don't get for your money is a hard disk, which can be a pricey option putting the 1500 out of reach for a great many users.



Commodore's "family computer", the A1500

AMIGA 3000

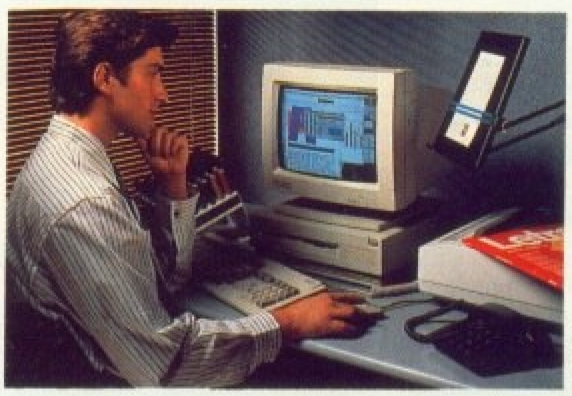
Perhaps the most significant news of last year for the Amiga family was the addition of the Sports Turbo. The Amiga 3000 is Commodore's second bite at the corporate cherry. Well out of the price range of most Amiga enthusiasts, this machine sports a super-fast 68030 processor and the very latest version of the Amiga enhanced chip set.

Where it could be argued that the 2000 was aimed at the IBM market, it's fair to claim that the 3000 series competes head on with high-end Apple Macintosh computers. The 3000 comes in three flavours, one 16MHz and two 25MHz machines. The latter runs around 10 times faster than a standard Amiga 500, 1500 or 2000. The 3000 is pitched at the multi-media market by Commodore.

The fusing of the Amiga families credibility in graphics and sound with the increased speed of the 3000 is a very attractive proposition.

Physically, the 3000 looks very different to the rest of the Amiga range. It's a good deal narrower than the 1500 or 2000 and is white rather than vanilla.

You could easily mistake the 3000 for a dedicated power workstation or a member of the Apple Macintosh II series at first glance – maybe that's the idea.



Go faster stripes! Desirable dream machine – the A3000



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HARD DRIVIN'

Stevie Kennedy takes GVP's new hard drive for a stroll – and ends up sprinting round the block

The A500 owner has never been spoiled for choice as far as hard drives go. Since the launch of the Amiga, the options have been either an official A590 or one of only three or four decent alternatives. The former has the advantage of affordability and reliability, while the latter are usually bigger and faster, but a lot more expensive.

GVP's first drives would certainly knock a large hole in your bank account, but they were rugged and much faster than the Commodore drive and became a popular replacement system along with other drives such as the Vortex series. The punters, however, were clamouring for more.

As the applications software market has expanded, so has the need for more memory and larger storage devices, and the manufacturers have had to respond.

Users of graphics intensive packages, those developing multimedia applications, or using huge sound samples in recording studios, all require more from their storage than the first generation add-ons could supply.

GVP's reaction was to take their successful first try and revamp, restyle and relaunch it as the Impact Series II.

The first difference you notice on opening the box is a cosmetic delight. The original GVP drives were ugly, chunky beasts and looked more like a plastic loaf of bread sticking out the end of the Amiga. The Series II drives are radically more attractive, and are styled in exactly the same way as the A500 case. When attached they looked gorgeous.

Enough of the admiring gazes, let's get down to business. Do they work?

The answer is an emphatic 'yes!'. If you open the drive at its heart you will find a high quality, near industry standard Quantum mechanism. On its own this would be a quick and reliable unit, and in various guises has served perfectly well for several years.

GVP, however, has improved the drive's speed and efficiency by developing its own controlling software.

The Faaast software is designed to overcome the sometimes appallingly slow data transfer rates offered by AmigaDOS. It comes on floppy disk and in the shape of ROMs fitted in to the drive itself. When you initially install the unit the floppy based utilities are simple enough to follow, so the drive can be prepped formatted and ready to use inside five minutes.

The only problem we found was the usual assumption that you don't have another hard drive attached, forcing you to stop the automatic process and rename the new drive.

This, however, was a minor hassle. The software generally worked well, allowing multiple partitioning and, through the more complex manual prepping procedure, full control over the way the drive was set up. With relatively few headaches, the beginner should be able to handle the process with ease.

The only sticking point might be with the startup-sequence, which must be altered or added to if the drive is to auto-boot. The unadventurous user can get round this by simply copying the GVP utilities disk over to the hard drive when prompted during prepping. This contains the required S: directory entries.

When you begin to use the drive in earnest, the speed of operation can take you by surprise. The claimed data transfer rate is a peak of approximately 1Mb a second with a certified access time of 11ms, and it really does show.

The custom VLSI controller and FaaastROMs chew their way through disk operations at a crunching rate of knots, loading Protext V5 in about 4.5 seconds, and chucking files to RAM and back in the twinkling of an eye.

I found the speed most satisfying when accessing large directories of files, which I had lazily neglected to tidy. The blisteringly quick access time comes into its own in a situation like this, and messy files are blarted to the screen in just a second or so – much faster than the older drives.

The drive's other features are almost as impressive. Memory can be added on-board in the shape of SIMM modules giving two, four or eight megabytes of auto-configuring RAM. Up to seven extra drives can be added via the Mini-Slot expansion port.

This slot brings out all of the expansion bus' signals, so you could, with the appropriate connector, add any standard Amiga peripheral without having to plonk it into a clumsy through-port.

There is also a game switch that will allow the extra RAM to be accessed by games without the drive auto-booting, a built-in fan, and an independent power supply.

The latter is a bit flimsy when compared to the drive, and our original unit blew a couple of fuses, but the replacement has given good service, and you can always stick in your own as long as it meets the same power requirements.

The GVP drive is exceedingly expensive, retailing in its most basic form at just under £500. However, if you want the fastest drive available for the A500, memory expansion options up to 8Mb, all in an attractive casing, the GVP Impact Series II drives are worth the high price tag. Thoroughly recommended.

GVP Impact Series II Hard Drives
Price: £499 for 20Mb with no extra RAM, to £1,289 for 80Mb with 8Mb RAM

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MED213

The last spoonful of tuneful medicine from the doctor of dance, Paul Austin

Hi folks, it's the MED man again with the final thrilling instalment detailing the music creation process on your Amiga. If you have no idea what I'm talking about, I suggest you dig up the last two issues of the world's greatest computer mag (ahem, *Amiga Computing...*).

On the November issue you'll find MED213, the great music utility gracing our cover disk. December's glossy interior features the first instalment of my guide to MED213, which points a complete musical beginner in the right direction so that after following our course, you'll be well on the way towards producing an Amiga musical masterpiece.

Last month's article was principally devoted to basic production techniques, mainly concerning short sections of music contained in a single block.

This month's instalment expands these humble beginnings to produce a complete song, with verses, choruses, middle eights, solos and anything else you can think of.

The mechanised approach

There are two types of song construction, the first being the 'build as you go' method, which happens to be by far the easiest way of producing a song. But be warned, there are some disadvantages.

Arrange a melody within a single block, perhaps based around the main theme of the piece, generally referred to as the hook line. It's usually played by the lead instrument. Bass, drums, keyboard – whatever grabs you the most. Once you're satisfied, build up the block to its maximum, adding all the other instruments you feel fit the piece.

When you think it's impossible to justify adding any more, go to the block section and copy it over as many times as required. Now go back to the top of the sequence list and remove all but one of the elements – it's up to you which ones.

Next move to the second block and go through the same procedure, adding an extra element or two as you move through the sequence list, until you reach the full arrangement.

This method can be taken to its logical conclusion by editing the new sequence parts. Re-arranging a bass line for example, prior to the sequence building up to full swing.

Now go through the same process with the next section of the song, if indeed there is one. Once the elements of the piece are written, copied, and cut down as required, simply paste them together.

With all the component parts being variations on the same theme, there shouldn't be any problems keeping the piece in time.

The creative approach

That's basically the classic dance track formula, the main drawback being the inevitable 'sameness' of the end result. Fine, if that's what you want, but to produce something with a little more originality a good deal more effort is required. The second method is a somewhat longer process, but the ends definitely justify the means. When using this method it's a good idea to write the play sequence down before you start. This describes how many verses, choruses and so on you want, and once done, you can start to compose the masterpiece.

The key to the creative approach is to make sure the component parts flow smoothly from one to the next.

In order to do this examine your play list, making note of which section joins the next. For example, your epic may go something like this, intro, two verses, two chorus and a middle eight, and so on – middle eight being a generic term for something used to link various sections together.

The first thing to do is produce the intro, followed by the verse, then the chorus and so on. Initially, just produce one block for each section of the song. After completing each part check it against the next and any other sections it will come into contact within the course of the song.

And now the difficult part. You have to get the various elements to run together smoothly. To do this, always start your song section on the first line of the block because this will make life a lot easier and it's the key to keeping the whole thing in time.

That done, all the elements should be flowing smooth and sweet. Before going any further, save what you've done in case disaster strikes.

The next and equally vital task is to grab a pen and paper and make a list of exactly the number and order of the various blocks. It's all too easy to get hopelessly lost in an ever growing sequence list.

Now type in the numbers from your sequence list and listen to your creation. Hopefully all's well but it's probably a little dull. If that's the case, copy a verse or chorus and write a solo in place of the normal melody line.

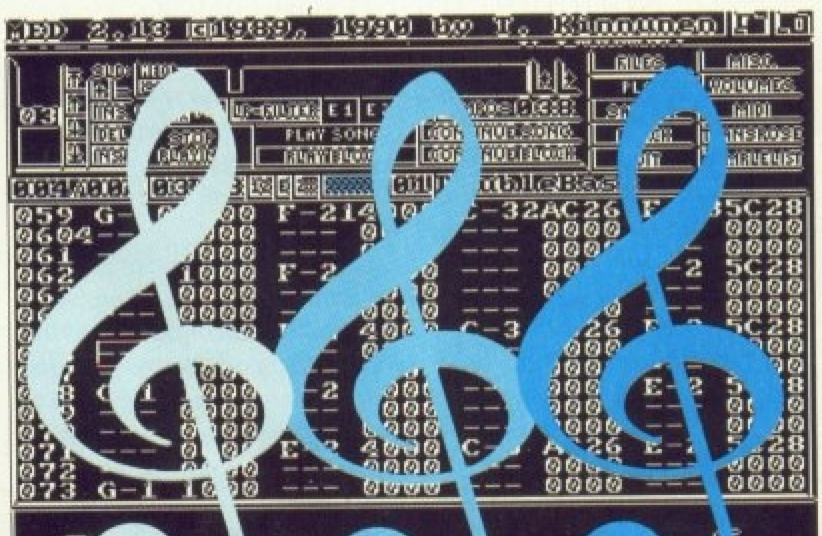
I know this sounds a daunting prospect, but don't worry, it's a simple matter of messing around with short runs (a few notes from the relevant scale which counterpoint the rhythm) until you stumble on something that fits.

When you've got something, replace the old block with the new and give it a listen. Even a simple solo can sound very impressive when heard in the context of the song. Remember, always make a note of where you're up to.

Another method of enhancing the piece is to change key. Thanks to the power of MED's editor, it's as simple as selecting the required section and, with the aid of the transpose option, altering the key as required. This may take a little practice in order to avoid a clash, but it's nevertheless a simple operation.

Well, that's just about it. Hopefully, using these articles, you've been inspired to great things musically.

We plan to expand the musical coverage within the magazine – so watch this space!



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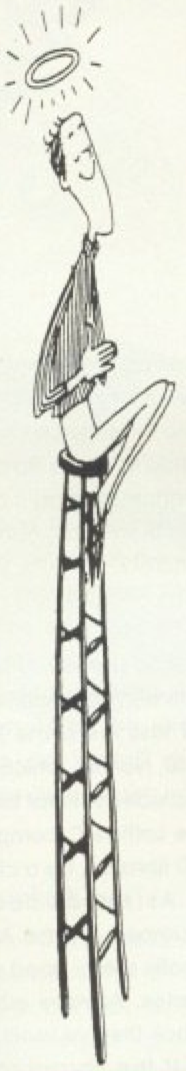
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Virus lingering even after the flush...?

I am hoping that you or one of your readers may be able to help me. After ruining many disks trying to get rid of the BGS9 virus, I finally got rid of it with VirusX 4.01 on the November cover disk. Thank you (don't mention it - Ed). I now have another problem that may be another virus not cured by VirusX.

On booting up the write-protected Workbench from cold, everything is normal, but every subsequent disk insert returns the "Error Validating Disk" and advises using DiskDoctor to repair the disk. This has no effect. VirusX indicates a non-standard bootblock, but even when I repair it the disk will act the same if I boot it again. The disk acts normally when inserted with the write protect off. I also have an art package with the same symptoms.

This may be totally unrelated to the above but sometimes after running a program for five to ten minutes the computer crashes with guru message 3.1B970. I hope you can assist me. I really enjoy your magazine.

Joe Silke, Carlingford, Co. Louth.

Yup, sounds like you've got a nasty little virus there. In fact, it sounds like you may still have BGS9 or another such file virus. As you may know, the difference between the annoying viruses and the really aggravating ones is that the latter now cunningly attach themselves to a file on disk and can't be detected by the standard bootblock virus killers. Luckily, the November cover disk also contains a copy of KV (KillVirus) which will quickly despatch BGS9. Just follow the instructions in November's disk pages, copy KV into your C: directory, and check the suspect disks. That oughta fix 'em!

All at C

After acquiring NComm 1.9 on the July edition's cover disk, I decided to go about writing my own terminal program. It won't be amazing, but at least I'll have learned something about C, which I am planning to use.

1. I only have Lattice C V3.03, which I have found highly inadequate to compile the Comm source on one of my Fred Fish disks. I can't afford the latest version and I'm definitely not going to pirate it (bravo! - Ed), so is there a PD alternative that won't have me struggling to convert Lattice C into PD C?

2. I have seen Aztec C and Sozobon C, but I don't know which one to go for. Are there any others?

3. Which book would be useful as a beginner, but also useful when I am more experienced (and also mentions Comms in C).

4. On to BASIC. I have acquired a library called 'xprzmodem.library' (it came with NComm) and wish to use it in Amiga BASIC but the problem is I need a .bmap file. I've tried looking at the library file with all manner of text editors, printing it out, and trying to make a .fd file from it, but nothing seems to work. Whadda I do???

James Lanng, Wirksworth.

Public Domain C compilers have become relatively numerous recently, but they all do more or less the same job. A good bet is Fish disk 340, NorthC, which is based on Sozobon C and includes several useful utilities. It also claims to be Lattice C compatible, and at £2 from most PD libraries, it's a cheap way to find out.

As far as books are concerned, I'm stumped. Try the Abacus range - they're generally pretty good and cater well to beginners' tastes. Anyone out there who can suggest a book they've used themselves?

If the library routine won't convert to a usable .bmap once treated to the ConvertFD program on the Extras disk, my advice is to get another copy of NComm and try converting the xprzmodem.library on that. You may have a corrupted copy.

Is there anybody out there?

I am the proud owner of an Amiga B2000 and a Hewlett Packard Paint Jet printer. My main uses at the moment are DTP and graphics production for business. I also use a CBM 1550C for labelling and mail merge.

First question: is there a device on the market to enable me to share both printers? At the moment I am having to disconnect one while using the other.

Secondly, I would like to break into communications. Could you advise me on the hardware and software required to do this, to enable me to communicate with Amiga and PC users worldwide?

B D Parkhouse, 4900 Herford, Germany.

On the first point, I'm not aware of any printer sharers around, but there are plenty of monitor or joystick port sharers on the market, and you might be able to find one if you scan our ads enough. Trilogic are a good bet for that sort of thing. Alternatively, you could quite easily knock up a simple two way switch or have someone else do it for very little cost.

If you're prepared to spend a few bob, then comms is easy enough to get into. So if you have a phone line with one of the new standard jack sockets, just buy a modem, a serial cable, some PD comms software such as JRComm or NComm, and off you go.

You will have to keep a good weather eye on your phone bill though, as many of the bulletin boards have no Packet Switch Stream arrangement, necessitating long distance phone calls. We will be reviewing some modems in the next issue.

Is a hermit crab a resident shell?

While playing around with my Startup-Sequence I noticed that in the StartupII file some commands are made resident to speed up execution. But surely commands can only be made resident from the Shell, at least

according to the Enhancer Software manual. Indeed, when I tried to make commands resident from the CLI, none worked. Can I delete these lines from Startup scripts.

L B Elliott, Eaton Socon.

The Startup-Sequence is a script file, as you rightly point out, and as such its contents will be executed as long as the relevant commands are in the disk's C: directory. However, when you open CL, you open a specific tool, and it will not allow you to use the RESIDENT command. Just make sure you leave the correct files in the C: directory and you should be all right.

Getting organised

We've had a great response to Mr Neal's appeal for help in the December issue on the subject of making his Psion organiser talk to his Amiga. It IS possible and, courtesy of Dave Westwood, we will be carrying an article in next month's issue on this very subject.

Print and be damned

I read the letter from Rolf Nordiede of Norway (December issue) and I too have had the same problems with colour print-outs on an LC10 colour printer. The solution is to select custom for the page length in preferences and then tell it how long the pages are (usually 66 for tractor fed paper). Hey presto, the stripes disappear! Any stripes left now are usually caused by inconsistencies in the ribbon. Apparently, selecting Custom alters the way the printer drivers handle line feeds when doing graphic dumps.

And now a question. Do you know of a specific driver for the Star LC24-10 or XB24-10 (I own a XB24-10), because I have been having problems with Pagesetter 2 in that it will not print beyond the 80th column of the printer even though the print head moves all the way across the page HB Marketing tell me this is because of incompatibilities between the Star printers and the EpsonQ driver supplied on the Extras disk.

David Sellwood, Warrington.

Well, you seem to have answered that one yourself. If the Star, which is supposed to be fully Epson compatible, doesn't print 130 columns, then choose custom page size in preferences, set right margin to 132, and make sure to select colour in graphic 1. If that doesn't work, there is something wrong with your printer. Gold Disk don't provide printer drivers, and rely on the Workbench drivers to do the job.

Oh no! Not again!

Please find enclosed my cover disk for Amiga Computing's November Issue. I am unable to read DOC. files on the various VirusX related programs. When I click on them, it stops with UNABLE TO OPEN C: PPMORE 205. Please send a working replacement.

Name withheld for reasons of embarrassment.

You wouldn't believe the number of people who return cover disks to us each month because they get error 205. Let me explain in some detail.

If error 205 pops up, it means that something is not where it should be. The program or icon is trying to use a file or library that isn't available. The most common source of this error is the practice of dragging icons from one disk to another without copying the relevant files to the new disk.

When the icon is clicked in its new home, it looks for the files, doesn't see them, and spits out error 205 in disgust. The best cure for this is SID, the PD program which replaces many old CLI's functions with a much more user-friendly environment. If you've ever cursed CLI whilst messing around with a disk's contents, then get on to a PD library now and put SID on your boot disk.

The specific problem in this case is that, although you have probably copied all the files in the VirusX directory over to the new disk, you haven't copied the PPMORE program over into the new C: directory. PPMORE is a de-



cruncher designed to view text files crunched using PowerPacker. It usually resides in the C: directory and if it is not there, you get error 205. Simply copy it across to the new disk's C: directory and the problem is solved.

NOTE: The C: directory does not have an icon on workbench. It is where all the executable commands, such as 'dir', 'endcli' and others, reside and it is where Workbench will always look for them.

Look out! She's gonna blow!

I have experienced some not inconsiderable problems with my recent purchase of a Fat Trapper 2.5 meg expansion board from Bytes and Pieces of Lytham. Without going into great detail, suffice it to say that, since installing the board, my A500 gurued on a regular basis.

This problem occurred not only with established commercial software such as Pro Page and DPaint, but also with PD software and, astonishingly, Workbench! Further to this, I found that the standard Commodore power supply was unable to cope with the hardware and I have had to replace the PSU fuse each time I have switched the machine on!

Bytes and Pieces eventually acted honourably and refunded my money, however, I would like to warn your readers against the pitfalls of expanding the A500 beyond one meg. Is it true, as Bytes and Pieces claim, that "the Amiga is not made to a very high specification and even Commodore (privately) consider it a throwaway unit"?

Keith R Munn, Kirkintilloch.

No, it isn't. The problem is that many third party peripherals manufacturers are too busy making money to spend more time on research and development. They continue to produce units which consume more power than the Amiga's PSU can deliver, and seldom bother to warn their customers of the dangers involved. They could use high quality low-consumption DRAMs, but that would reduce profit margins, so they prefer to let the punters find out the hard way. Luckily, such manufacturers are in the minority.

If you do carry on, and upgrade your RAM or add a power-hungry hard drive, the only answer is to buy a PSU which delivers more current. You'll finds several of these in our ads.

Keith comes a cable cropper

After a favourable review of the Okimate 20 printer in your magazine, I purchased one from Mr Diamond in Poole for my Amiga 500.

However, I discovered the plug-in module supplied was for a serial connection and not the parallel connection referred to in your review.

I queried this with Mr Diamond of Poole and he said all his stock was of the serial connection and this was satisfactory, but I would like to know if there is any disadvantage and if so how I can buy a parallel cartridge.

I would also like to ask if the purchase of an additional 1/2 meg of internal memory other than the official Commodore cartridge will invalidate my warranty.

Keith Chambers, Poole, Dorset.

As long as your Okimate has a parallel interface, you can use a standard cable which shouldn't cost more than about £10. The serial cable supplied is sufficient, but printing will be speeded up if you use the parallel port.

The fitting of a third party RAM expansion inside the trapdoor will not cost you your warranty, but opening the case to fit one of the other types of internal board will. It's your choice, but I'd advise against taking the risk at least until your warranty runs out, as computer repairs can cost a small fortune.



Review

Join the dots!

The price of dot matrix printers is falling all the time. John Butters looks at the latest 24-pin Star

If you're going to use your Amiga for anything else other than playing games, you'll almost certainly need a printer. For many it will be one of the most expensive pieces of equipment attached to their Amiga and there are many types and models to choose from.

Laser printers give superb results but unfortunately their prices put them out of reach for about 99 per cent of home computer owners. For the vast majority of us, a dot matrix printer will suffice, especially a 24-pin model of which there are now many.

Back streets in the Far East are littered with factories that churn out these printers on practically a daily basis. Many have similar specifications and so these days, one of the main factors in deciding which model to spend your money on is its price.

Looking as if it's come straight from Star's wind tunnel comes one of the most modern-looking printers around, and at an affordable price too.

Bearing the name LC24-200, about as sensible as those of Boeing airliners, it can be bought as a colour model for little more than the price of the mono device. As you might guess from its secret code-name, the LC24-200 is a 24-pin mode' suitable for most day-to-day needs, begging letters to the bank manager and so on.

The case is a cream colour, which blends in with the Amiga nicely, and is made from common hard plastic. Around its case, the on/off switch can be found at the foot of the front panel, which is easy to access providing the printer is placed away from the clutter on your desk.

On the roof of the printer is the usual control panel. Four well-sized buttons switch between the various functions and they've been labelled Font, Pitch, Set/Eject Park, Paper Feed and On Line. All speak for themselves and are easy to operate.

The mains lead is fixed to the unit, so you don't get the problem of a 'kettle lead' falling out. At the other end the plug is moulded onto the lead but the fuse can still be changed if necessary.

Not all's well with the design. The Centronics printer port is found at the front, right-hand side of the machine it means that in most cases the printer lead runs at an awkward angle across the desk - why not keep to the back of the printer? The only advantage in its present position seems to be the ease of access, but once the lead has been attached there would be very few times when you'd need to get at it.

So what about the printing? It's quiet enough to be used in an office or the home without disturbing everyone around you. There are two draft fonts, one of which is high speed, and a variety of letter quality faces including Times Roman, Sans Serif, Courier, Prestige and Script. In addition, all the fonts can be printed in italics and there are options for condensed, bold and double-sized print. Changing between them is simple.

Additional fonts can be added and the 7K printing buffer can be increased by plugging an optional cartridge inside the printer. Each cartridge costs £25 and they are available for the following fonts: TW Light, Russian, Gothic, OCR, OCRB and Bar Code 3.

The cartridge interface has changed from that of earlier Star models, so unfortunately the older ones are incompatible although their price has been slashed.

In high speed draft pica (10 characters per inch), you'll get a print speed of 222 characters per second (cps), which drops down to just over 55cps when one of the letter quality fonts isused. In elite, or 12cpi, that figure rises to 66cps. Also expect to find 15cpi semi-condensed text, 17cpi condensed pica, condensed elite at 20-pi and proportionally-spaced .

Paper is fed into the mac..ne through various routes and it is possible to keep fanfold paper loaded, while printing on other paper, such as single sheets being used for printing a letter. Single sheets are loaded with assistance from a paper guide which clips onto the back of the printer.



• Sleek lines and smooth edges - the Star LC24-200 is a good-looking machine...

Replacing the ribbon cartridge is a very easy job and, unlike many other printers, you don't come from the operation looking as if you've been cleaning chimneys. In the unlikely event of having problems with the printer, the A5 manual offers clear instructions on how to solve the difficulty.

The LC24-200 is a bit oversized, but nevertheless room could always be found for this one!

Colour too

If simple black and white isn't good enough for your needs, taking another £60 from your bank account will get you the same printer but in colour.

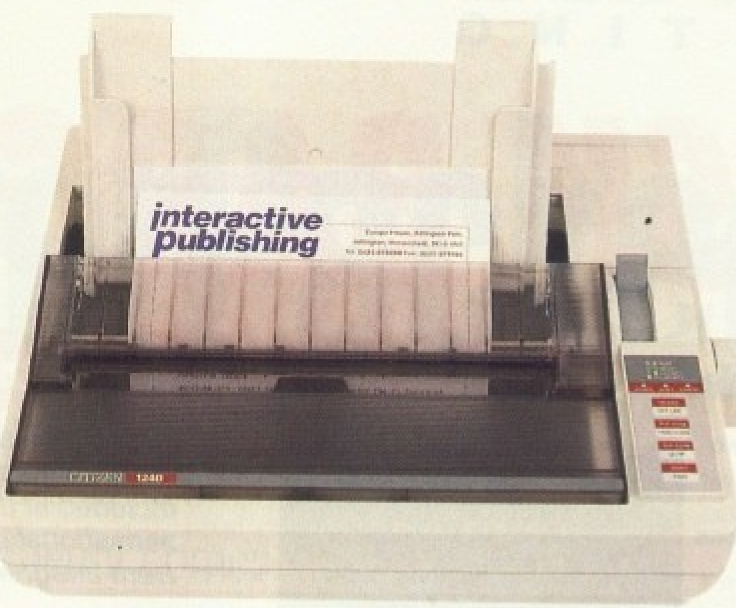
For the last few years, Star Micronics has adapted its monochrome models to run in colour. Until now almost every printer in the Star range could have been converted by the user fitting an adaptor and colour printer ribbon to the black and white model.

The LC24-200 introduces a change to the system. You now have to buy a separate printer. The casing remains the same as its simple sibling but a few differences inside and a colour printer ribbon give you a choice of colours (red, blue, violet, yellow, orange and green).

Product: LC24-200
Supplier: Star Micronics
Telephone: 0494 471111
Price: £309
Configuration: All Amigas

Print and don't be damned!

Every Amiga needs a printer. John Butters gets out his journo's pad and investigates Citizen's latest budget priced 24-pin baby



Good looks to match performance

Before picking a printer you'll have to choose between three types – dot matrix, laser or ink jet, and largely it's the contents of your wallet that will determine which you go for, with lasers and ink jets costing upwards of £1,000.

So most people are limited to the much more affordable dot matrix machines. But worry not, these days the difference in quality relative to price is marginal, and for normal home or office use a dot matrix is the ideal choice.

Now another fine model has made its way on to the Amiga marketplace in the shape of the Citizen 124D.

It's one of the cheaper 24-pin models available, at a price only a little higher than you would expect to pay for a lower quality 9-pin printer. There are two letter quality fonts, Courier and Times Roman, as well as draft mode. The fonts can be swapped easily at the press of a single key at the top of the machine.

The selected font is shown on an LED display on the control panel, to be found on the right-hand side of the printer's casing. If you want to scan the available typefaces you can get a printout by pressing the font key as the printer is switched on.

Perhaps the second most important factor after print quality which will determine your choice is speed, and the 124D performs well.

Normal printing is at 10 characters per inch (cpi), with a print speed of 120 characters per second (cps) in draft mode and 40cps in one of the letter-quality fonts.

By adjusting DIP switches you can achieve 12 or 17cpi, or proportional printing where the printer adjusts the spacing to the character being printed.

In the 12cpi configuration the machine goes flat out at 144cps in draft, while in one of the letter-quality fonts it offers 48cps.

Sheet guides are becoming more common today', and the 124D has scored here as well. The easy to use sheet guide clips on to the back of the printer. Paper can be dropped into it a single sheet at a time, and is automatically aligned in the correct position. The guide has two positions – up for single sheets or down for continuous pinfeed paper.

Swapping between pinfeed and normal paper is a tedious task that has to be done quite regularly. Fortunately, you can get round this – as the 124D has an option for loading and printing on a single sheet paper while the pinfeed is still loaded.

All you have to do is let the printer know what's happening by pressing a key on the control panel. A lever inside alters the print head so that it can handle up to to seven different thicknesses of paper. This is especially useful if you're using carbon paper for copies of documents.

Although compared to some dot matrix printers, the 124D doesn't make too much noise, it can be made quieter yet. Selecting Quiet tells the print head to make two passes instead of one, so although there's less noise it will take twice as long to complete the print out.

Like the Amiga, printers have their own memory. When printing is started data is transferred to the memory buffer and once this is full data will be kept with the Amiga until there is some free space in the printer's memory. Unfortunately, this keeps the Amiga occupied so you're unable to get on with other things.

The Citizen 124D has an 8K memory buffer and so reasonably-sized documents should pass through the Amiga quite quickly. Memory is expandable to 32K and with that only very rarely should the Amiga be occupied with printing.

Fitting replacement ribbons can often be a messy job, with your fingers looking dirtier than if you had changed a car tyre. That's not the case here - the front lifts off easily and the ribbon cartridge clicks straight in and out.

Although at a first glance the machine might seem a little bulky in its cream-coloured case, it's a pretty standard size at 40.2cm by 32cm and it weighs 5.5kg. The clearly written ring-bound manual runs to 216 pages.

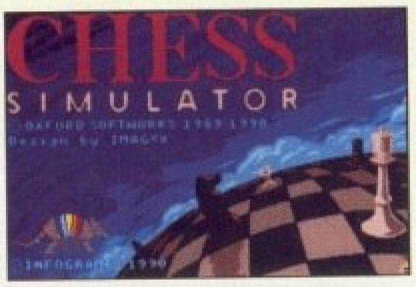
The quality of printouts is much better than that of most printers in the same price bracket, although better results are available from the more expensive 24-pin models. But Citizen has certainly come up here with a good quality machine at an affordable price.

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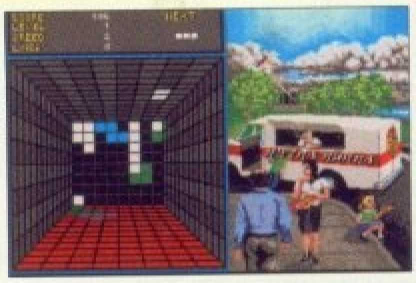
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TO ORDER PLEASE USE THE FORM ON PAGE 129

PowerPacked!

Are your drives feeling the squeeze? When it comes to the crunch Nic Veitch finds out there's nothing to top PowerPacker.

Ever since I read an article in Sinclair User (way back in 1981) entitled "How to get a quart into a pint pot," there is nothing that gives me more pleasure than seeing a really excellent compression routine.

Anyone who has dabbled in comms or even PD software will have heard of such compression programs as Arc, LHarc and Zoo. These are all very well as far as they go, but the problem is that the files have to be decompressed before you can use them – or do they?

Run-time decompression is an area attracting a lot of interest these days – effective RTD is the grail that will deliver working real-time displays on CDI and Commodore's CDTV.

The idea isn't a new one, it has been around for some time and it isn't limited to just animation. Executable code can be decompressed immediately prior to execution. Effectively this means that you can run a compressed program file.

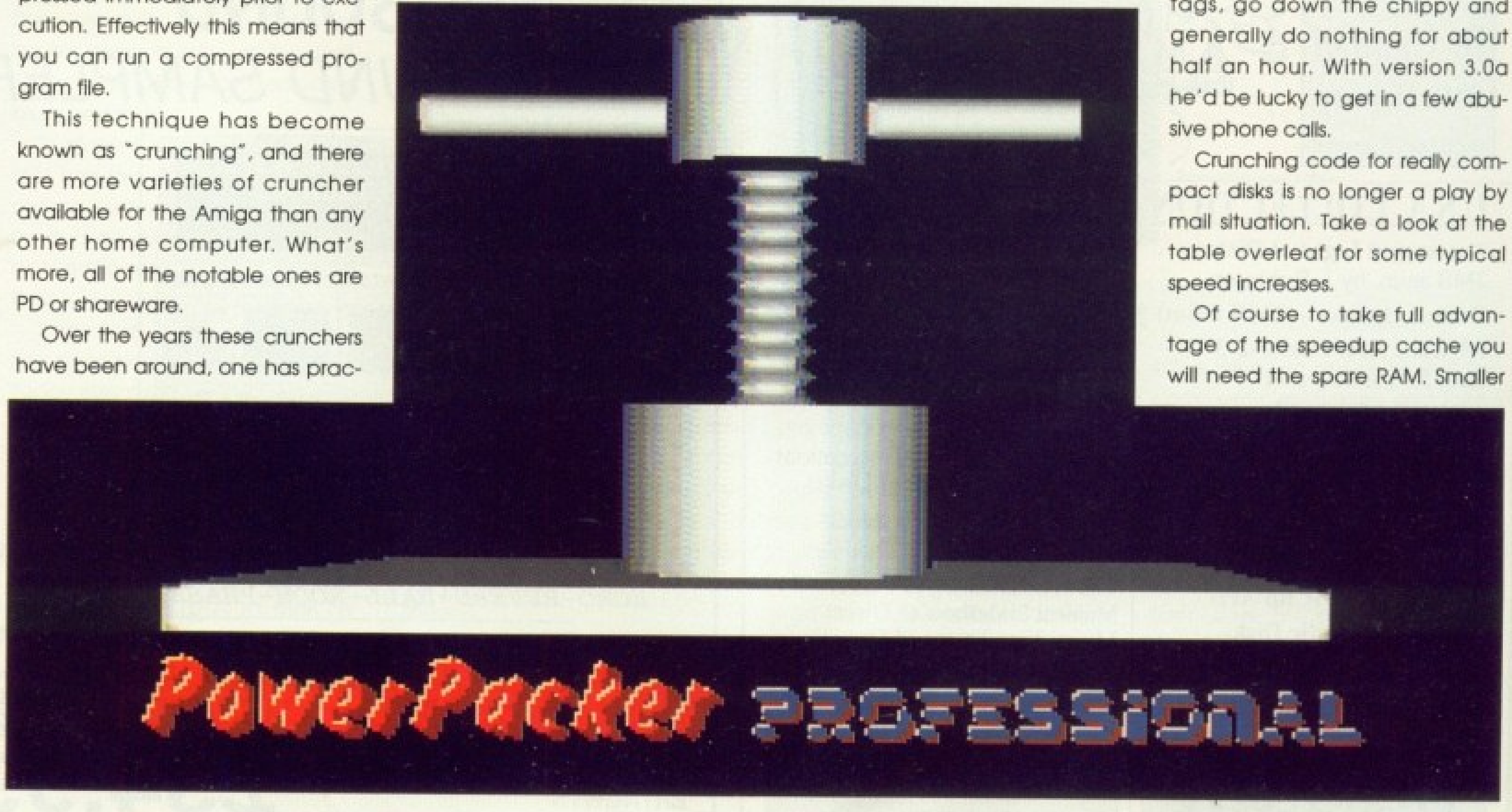
This technique has become known as "crunching", and there are more varieties of cruncher available for the Amiga than any other home computer. What's more, all of the notable ones are PD or shareware.

Over the years these crunchers have been around, one has practically cleaned up. That one is UGA's PowerPacker.

It has been used everywhere in the sentient universe – we've even had it on our coverdisk! This program has a reputation for being the most stable and most efficient, if not the fastest cruncher around. Now it's gone commercial.



A wealth of options



Commercialism justified

So, what major changes have been made to justify this move to the money sector? The most notable change is the massive increase in speed. The code has been totally restructured to take advantage of a memory cache of up to 200K. The result is an increase in speed of about 2,000 per cent!

I remember in the old offices when Jeff used to be packing programs for the disk on version 1.1 of PowerPacker. It was a great excuse for him to pop off for a few fags, go down the chippy and generally do nothing for about half an hour. With version 3.0a he'd be lucky to get in a few abusive phone calls.

Crunching code for really compact disks is no longer a play by mail situation. Take a look at the table overleaf for some typical speed increases.

Of course to take full advantage of the speedup cache you will need the spare RAM. Smaller

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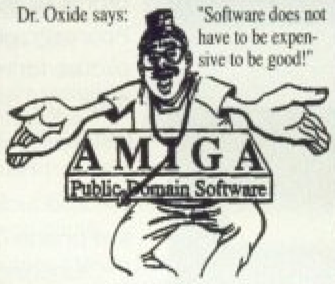
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caches can be used if you haven't got the spare memory but speed increases will be limited to a factor of around five or six.

The other major difference is the use of overlays. In the pre-commercial days PowerPacker would have trouble with complicated programs which contained special hunk types. Typically these were exactly the sort of programs that you needed to crunch in a desperate attempt to make a 40Mb hard drive seem usable – like Dpaint, PagesetterII, and ProDraw.

Now almost all programs can be crunched. The technique is not to attempt to crunch the difficult hunks but to load them in afterwards as overlays. This restricts the level of compression, but still allows you to save a decent 37 per cent on Dpaint.

Crunching data

It's not only executable code that can be crunched but data files too. What's the point when you can't use them as data files anymore? Well, you can. Text files that have been crunched can be read with PPMore, ILBMs viewed with PPShow and now anim files can be displayed with PPAnim. These three programs are supplied with PowerPacker.

Other data is still a bit useless – for example crunched PagesetterII files can't be loaded until they are decrunched. Software houses need to take up the challenge and allow for decoding crunched data.

To make it easier, the programmer has moved all the cunning crunch code into a library. Now there is no excuse for your next bob editor not to load packed files.

Some may frown at the practice of crunching. OK for a demo floppy they might say, but why use it on your hard-disk?

The answer is simple. If I can get an extra 10Mb worth of files on my Vortex and the only price I have to pay, apart from the eight quid for the program, is a two-second delay in loading 02:19:10, then I'd really be a fool not to.

PowerPacker 3.0a
£7.99
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Powerpacker makes short work of complicated files like Dpaint



Scripting facilities make short work of the largest directories

Performance crunching T.A.D.

		Crunched size (bytes)	Time taken
Powerpacker 2.3		59980 (56%)	1398 seconds
Powerpacker Pro	small	59492 (57%)	282 seconds
buffer	medium	"	164 seconds
	large	"	71 seconds

PowerPacker table

Shareware Statement

All previous versions of PowerPacker, up to and including version 2.3b, have been shareware. I would have thought that anyone who has been involved with the Amiga for more than a couple of months would understand exactly what shareware means.

Shareware is a method of software distribution which allows the consumer to try out the software extensively before paying for it. If you don't use it fine - pass it on to friends or delete it. All the author is asking is that if you use the program regularly you make a contribution towards the effort and expense he went through trying to produce it.

If you do register you will more often than not get a nice note from the author plus updates to your software when they become available. That's more than you get from most commercial software houses. The point is that if you don't register the author either gives up or sells his stuff to commercial publishers and then the people who lose out are the public.

The thing that makes the Amiga so special – behind all the custom chips and multi-tasking – are the users, and the most important users, the ones that make things happen, are the hobbyists and part-time coders. If by inaction you force these public spirited Amigans out of the picture the real loser is the Amiga community.

Broadcast Titler II

Our very own Paul Austin provides a professional touch to Amiga Desktop Video

If you are the lucky owner of a satellite dish which gives you access to American TV, or to be more precise American TV sports coverage, you will no doubt be familiar with Broadcast Titler and its counterparts without even knowing it.

As you sit happily chomping through popcorn and guzzling down a can of Bud, Broadcast Titler is no doubt responsible for the seemingly endless flow of facts, figures and not to mention, remorseless advertising, flashed before your eyes.

BT is a very impressive video titling package, which can produce amazing sequences containing both text and graphics. Even an absolute beginner can produce broadcast quality results in a matter of hours.

The software has most of the features available from a dedicated video character generator. It is possible to create up to 100 plus pages of varying text and graphics. All the pages, fonts, graphics and indeed the program itself are held in Fast RAM, which means quick retrieval and instantaneous typing, even when using the largest fonts available.

Fonts

There is, however, a price to be paid for such power, and as you may have guessed, it's memory. The extensive use of Fast RAM requires an Amiga with at least 1.5Mb of RAM – two megs are actually recommended. The more RAM, the longer the sequence lengths and the larger the range of fonts and pictures available.

Even with the maximum 9Mb that the Amiga can provide certain sacrifices still have to be made, namely multitasking, which is not available while using BT. This is due to software design and tasking requirements .

The need for large memory will no doubt cause some extra financial worries for some would-be users. The lack of multitasking I found more of an inconvenience than a problem. However, taking into account the expense of possibly having to add extra RAM to your system, the results that can be obtained make it well worth the expenditure.

With the restrictions imposed by the printed page, it is not going to be easy to convey the smooth and stylish effects that the software can produce – by far the most impressive aspect of the package.

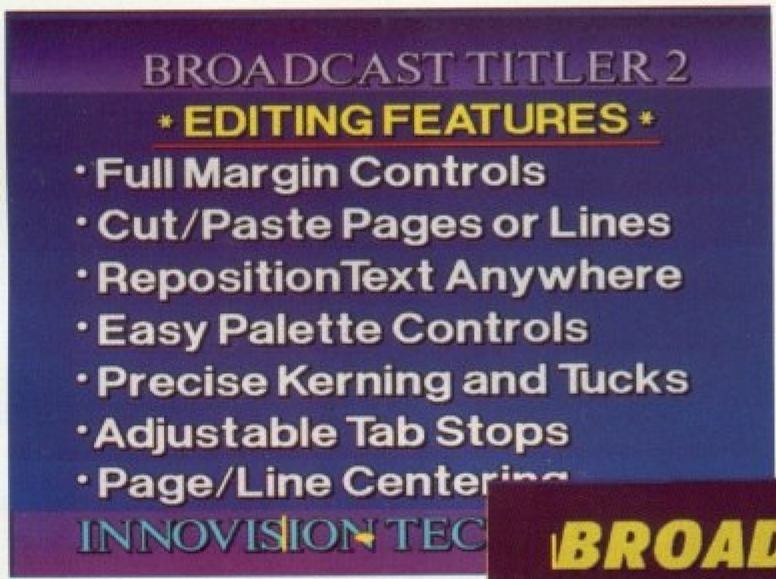
Fades, crawls, flips, scrolls, rolls, stacks – the list goes on and on. All of these are special effects which the program supports and as a result can be combined in your titling sequences. If we all had a CD TV I could show you what they all mean – but maybe next year.

There are two really striking features concerning BT. The first is the fact that you only receive one floppy disk for your £228.85 including VAT – a brief pause to pick yourselves up from the floor. OK it's not cheap for one program disk plus a demo, but, as the well worn cliché goes, size isn't everything. The second feature, and most definitely the more pleasant of the two, is the ease with which the program is controlled.

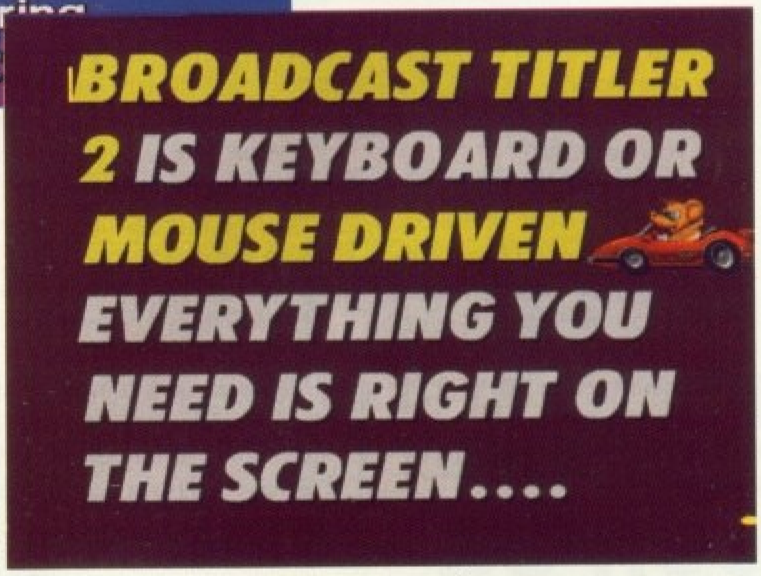
User friendly may be a rather tired expression, but in this case it certainly fits the bill. Simple keyboard and mouse controls make very complex effects as simple as clicking on an icon. The entire program is menu driven through a series of option screens.

The designers have avoided the temptation to produce a product aimed at the technically minded. Instead, they have developed the software to do the hard work and still managed to leave the program with a great deal of flexibility.

As mentioned earlier, the system is capable of multiple fonts, all of which are all anti-aliased, which basically means that the fonts produced are very smooth and sharp.



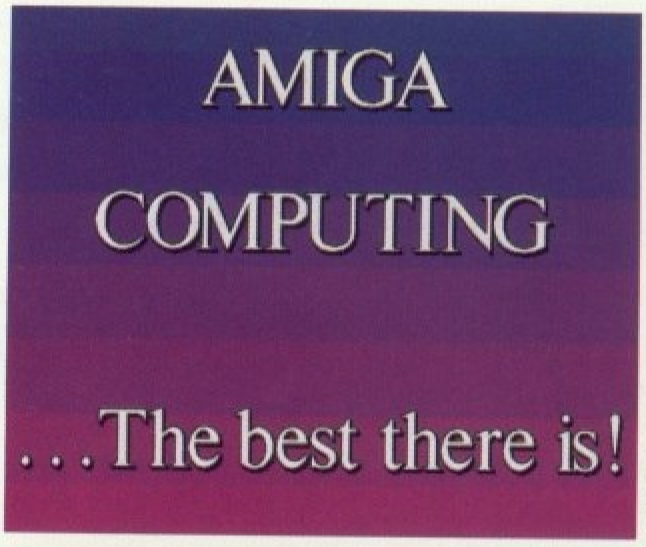
All the options in a scrolling spectacular



Here we have the worlds fastest scrolling rodent



Multiple sizes of the same font



Lets face it folks is there anything else to say

This is especially noticable on curved edges due to the fact that they don't suffer from the stepped effect, which haunts aliased fonts.

It is also possible to import IFF brushes direct from any paint package and incorporate them into your sequences. Consequently some very interesting possibilities raise their artistic heads – company logos flying around in your sequences perhaps?

The size of each font can vary from banner size, which can be up to 100 scanlines, to disclaimer fonts that come down to a minimum of 15. It is possible to access additional fonts by using the font converter included in the package.

Editing

Commercially available fonts, Amiga fonts, colour fonts and multi-colour pattern fonts are all available in hi-res with sizes ranging from 15 to 200 scanlines high. It sounds too good to be true, but I assure you it's all on the level.

The Font Enhancer package is a Broadcast Titler add-on, which makes it possible to import anti-aliasing fonts into the system. It's also possible to resize any font without sacrificing quality. The new resized font can be any size between 12 and 200 characters high, making it possible to produce a whole range of sizes of any particular font, which can then be used in the same title sequence.

Colours

The software enables the extension of the usual 16 colours used in hi-res to 320 colours. This is done by assigning a separate palette to each line used in a specific sequence, making use of what I can only assume is some very clever programing.

As a result individual colours and borders can be assigned to each character. The separate lines can be assigned their own transition effects with selectable speed and delay controls relating to each event on that line.

Many of the options usually found on a word processor are available with BT – cut and paste editing, adjustable margins including variable space and tuck, plus manual and automatic kerning – the relative space between the individual letters as they appear on screen.

Moving text around the screen is a simple process even after the text has been laid down, and does not seem to cause any ill effects when the resulting sequence is run. The software will also accept ASCII fonts with international accents and special symbols.

The amount of available fast RAM is the key to the system. With one meg of Fast RAM the maximum number of fonts would be 16 and 100 pages of titles.

If, however, you are the lucky owner of three megs of Fast RAM, 50 resident fonts are available with up to 600 pages of titling. This is no doubt more than would be used for your average video title, but perfect for some very impressive public information on perhaps a stand or shop window. It's quite likely it will find itself displayed entirely from the Amiga without ever reaching a VCR.

The software will support Genlock, the combination of which I can only assume is truly amazing. While reviewing the software I was unable to try out this option, so it would be a good idea to contact the Amiga Centre Scotland for further details relating to your set up.

There is also an option for the Amiga's Super High Res mode. Of course, to take advantage of this you will need a meg of chip RAM and a 'Super Hi-res Denise' chip.

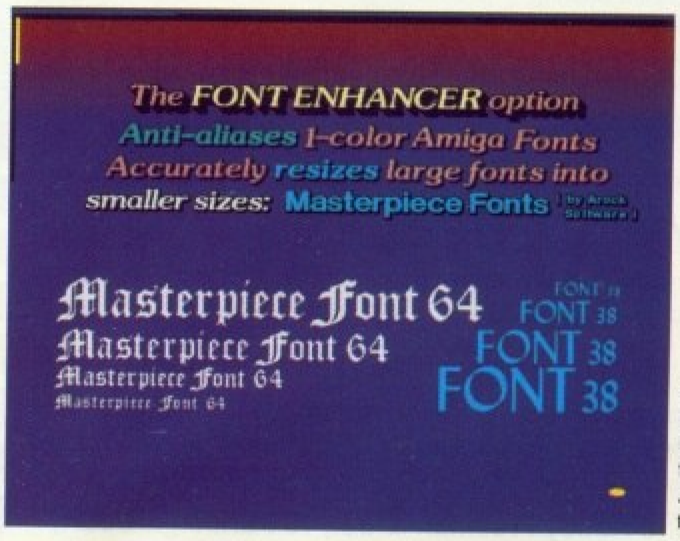
Conclusion

OK, it's not cheap, but you pay for what you get. If you are serious about desktop video I would say it's a must, even with the £200 plus price tag. It is by far the most impressive product I have seen.

If you are a professional in the TV or video field, start filling in the cheque. The only real drawback is the unavoidable American feel that creeps into the sequences, no doubt due to the system's formative years on the other side of what psueds call the pond.



A fine example of an imported bitmap brush



Even with the gothic fonts it's difficult to avoid the American feel

Roland rock?

DTMS is the latest Amiga acronym. But will the music train be pulling in at your station? Paul Austin reveals all



At last the serious side of the music business meets the serious machine. Yes it's happening at last. After many a long year being treated as a mere afterthought in the music business, the Amiga is beginning to take its rightful place at the forefront of synthesised music.

In the past the lack of an internal MIDI interface has been the Amiga's Achilles heel and the cause of the Atari ST's domination of the market. This is something that could all too easily have been avoided if only a MIDI interface had been incorporated into the Amiga.

Now, thanks to the cheap and numerous MIDI add-bns and sequencing packages available, instrument suppliers are beginning to capitalise on the largely under developed Amiga market.

One of the first to see the opportunity and stake their claim are Roland, one of the biggest instrument producers in the country.

During the recent Commodore show a new partnership between Roland and Commodore was announced – ' The dawning of a new day' with the promise of great things for the future of the Amiga. The new series of Roland hardware was highlighted as the flagship of the new era of co-operation and will, no doubt, be blazing the trail for others to follow.

The new range consists of all the elements required to build a self-contained music station. The heart of the system is the CM-32L.

This is basically a synthesszer without the keyboard, which with the addition of your Amiga and the accompanying sequencing software makes the need for a keyboard merely an optional extra.

The software provided takes the form of Dr T's Tiger Cub, a tried and tested sequencing package, which makes your first tentative steps on the way to fame and fortune that little bit easier. Up to 12 tracks can be recorded with Dr T's using familiar tape deck icons, all of which can be displayed on screen in a 'piano roll' format.

The system also includes Copyist Apprentice score-writer software which will write and display your creations in the more traditional form of a score. It can then be edited, transcribed and printed as required.

Also included in the Desk Top Music System, DTMS for short, are all the leads required for connection to a home hi-fi or amplifier. The MIDI interface itself is not included, but a suitable unit can be bought easily and cheaply from almost any hardware supplier.

All the relative manuals and

documentation are quite well put together and as a result make the beginner's life a lot easier. Even with handy manuals, setting up a MIDI system of any kind can still be a nerve racking experience, so read them carefully

The CM-32L generates its impressive sounds via LA Synthesis. This is the system used to create most of the sounds in the Roland D-series synthesisers and their modular counterpart the MT-32, which took the music world by storm with its sound quality and value for money.

The actual sound module of the CM and the MT are very similar and as a result can both share the MT's application software.

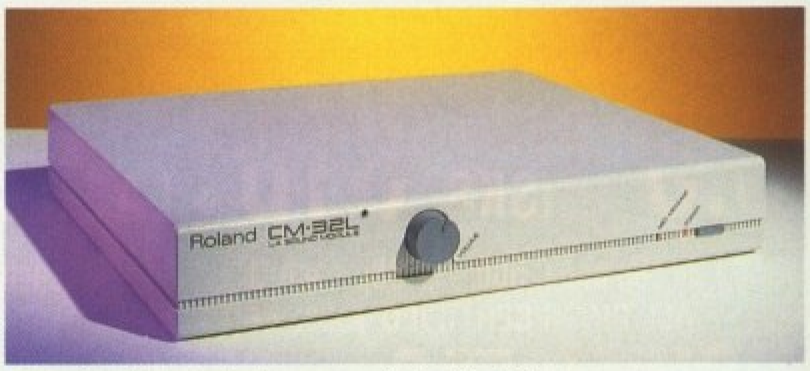
LA Synthesis refers to linear arithmetic synthesis, which is the heart of the Roland technology responsible for many of its recent successes. The system improves sound

ware. It's worth remembering, however, that 32 part polyphony doesn't strictly mean the unit will always play 32 separate voices. What it means is that it will play 32 parts.

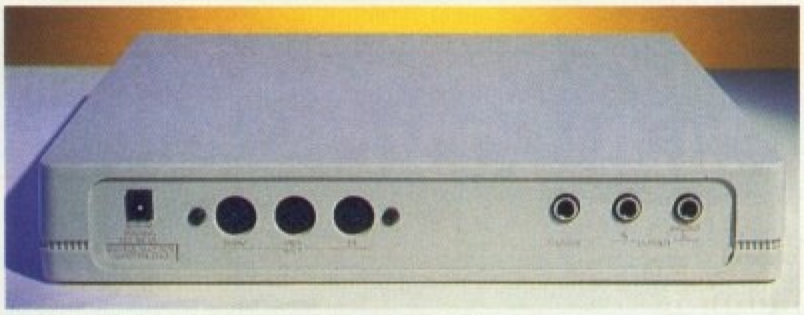
Confused? Don't be. Each voice or sound is made up of partials. For example, an acoustic piano may require as many as four partials, a bass guitar only one.

Finding out exactly how many voices can play at a particular moment, is simply matter of adding together the partial requirements of each voice. If the sum of the parts is 32 partials or less your creation will be produced in all its glory.

One of the essentials when trying to create music seriously, as any musician will testify, has got to be reverb. Yes, you've guessed it, the module also boasts a digital reverb. This really is a big plus for



Just perfect for the family album: mum, dad and the kids!



Brief but functional, the CM-32L from an usual angle

quality but also makes programming easier – now there's a rare thing.

The system uses partials to create its sounds. These are the various elements that go to make up a sound, more commonly known as attack, delay and release.

With an expanded PCM memory capacity twice that of the MT-32, the CM-32 is capable of stunning sound effects, making it ideal for post production and impressing friends. The unit is capable of 32 part polyphony, which basically refers to its ability to play 32 sounds simultaneously. A fact that would have left many a jaw dragging on the ground in the not so distant past.

The module is also multi-timbral, meaning simply that it will produce various voices or synthesiser parts at the same time. A total of eight synthesizer parts and one rhythm. This makes it possible to replicate the sound of an entire band when the module is linked to the Amiga via sequencing soft-

the unit as external reverb units can alone run to hundreds of pounds.

Some 128 synthesiser tones or voices are available as presets, plus 30 percussion sounds and 33 effects, all available for the rhythm part of your masterpiece.

Percussion sounds are generally excellent, with only a slight drop in standards regarding the cymbal sounds, a notoriously difficult area to replicate via synthesis.

The percussion section benefits immensely from the digital reverb built into the unit. Choice may seem slightly limiting at only 30 sounds in this department, but the selection is a good one and should keep even an experienced musician happy for a while.

As for the special effects, some may argue that the space they occupy could well be put to better use for more synth voices. I disagree, keeping in mind that the package is largely aimed at people making their first steps in MIDI music, they make for interesting variety, which will no doubt find its way into their owner's creations.

Unassuming power

Underneath an unassuming exteri lurks a massive amount of power and versatility. Suddenly the relatively high initial cost starts to look more and more reasonable. If you happen to be a trendsetter the sight of all this gorgeous gear will

be almost too much for your cheque book to bear. After all, great art is priceless – right?

A new disk will soon be available for the CM-32L containing numerous new drum patterns designed for use with the Tiger Cub software. When finished it will be shipped off to Roland customers post haste, or maybe even sooner.

As a first step the CM-32L is excellent, providing a wide range of voices all of which are usable rather than decorative. In the past there was a good chance that half the sounds included in a synthesiser were so bizarre and obscure they were rendered useless for any serious use. I'm glad to say times appear to be changing and in the CM's case they already have.

The unit is obviously aimed at those of us who want an entire band in a box, and this it does very well considering the restrictions imposed by the available number of voices.

The excellent sound quality is particularly evident on strings and breathy voices, something the Roland D-50 was and still is famous for. Roland's successes in the professional market are obviously starting to filter through to some of their less expensive products.

If you are interested in the CM-32L, but don't require the software, those nice people at Roland will let you mosey off with the module for a meagre £369.

IN future issues of Amiga Computing I'll take a closer look at the other elements of the Roland range and hopefully provide a few points on where best to spend your hard earned cash. Meanwhile, here's a quick run down.

The PC-200 is Rolands brand new MIDI keyboard controller. As soon as you recover from the financial heart failure of buying the CM, I strongly recommended you give it a close look. Even if you don't play keyboard it will still save you a lot of valuable time, as well as bring a hole new dimension to your creative technique.

The CM-32P is an additional sound module designed to complement the CM 32L. Both units can be linked together to produce some amazing sounds. The unit will also join forces with the MT-32. This piece of hardware can produce 64 new sounds with up to 31 voices or partials available at any one time, plus an option for an extra 64 sounds via a PCM cards.

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amiga almanac

Desktop Video

DTV is happening in the Amiga world so we're devoting a regular page to it. Jason Holborn gets in sync

I'm sure I don't need to tell you what a wondrous machine the Amiga is for desktop video – just flick back to our mega-feature in last month's issue and you'll be more than convinced.

Put simply, no other machine can offer anywhere near the kind of video power that the Amiga delivers for so little cash. With just a genlock, a couple of video recorders and the right software, you can produce fantastic video presentations on your Amiga. So amongst other things, you can really roll some fancy credits.

Now that the Amiga has virtually established itself as the de facto standard for desktop video, there's never been a better time to get involved.

Indeed, DTV has become such an important aspect of computing on the Amiga that we've decided it deserves its own space within the Almanac.

Over the coming months, we'll be bringing you all the latest news from the Desktop Video scene, plus a healthy splattering of product reviews.

ALTERNATIVE TITLING

Video specialist Alternative Image (0533 440041) is branching out into software publishing with its very first product, Big Alternative Scroller.

Scroller, as we will call it from here on, is a powerful yet very easy to use video captioning program which looks all set to take the Amiga desktop video market by storm.

Scroller's main claim to fame is undoubtedly its ease of use. According to Henri Bujko at Alternative Image, Scroller was developed to be so simple to use that (in his own words) "...it could be used within twenty minutes by the kind of person that wouldn't know the back end of a computer from an elephant".

In many ways, Scroller shares more than a passing resemblance to a conventional text editor. Unlike previous programs, text can be typed directly onto the screen and then set to any one of the 20 fonts which are built into the system.

Alternative has included its own range of specially designed high-resolution fonts developed specifically with desktop video in mind. These range from script-like fonts, to serifs and sans-serifs.

Another aspect of Scroller of which Alternative is duly proud is its speed. Because the fonts are resident, there's no time consuming disk accessing to worry about, just select the text you wish to change, press a key on the keyboard and the text changes almost instantly.

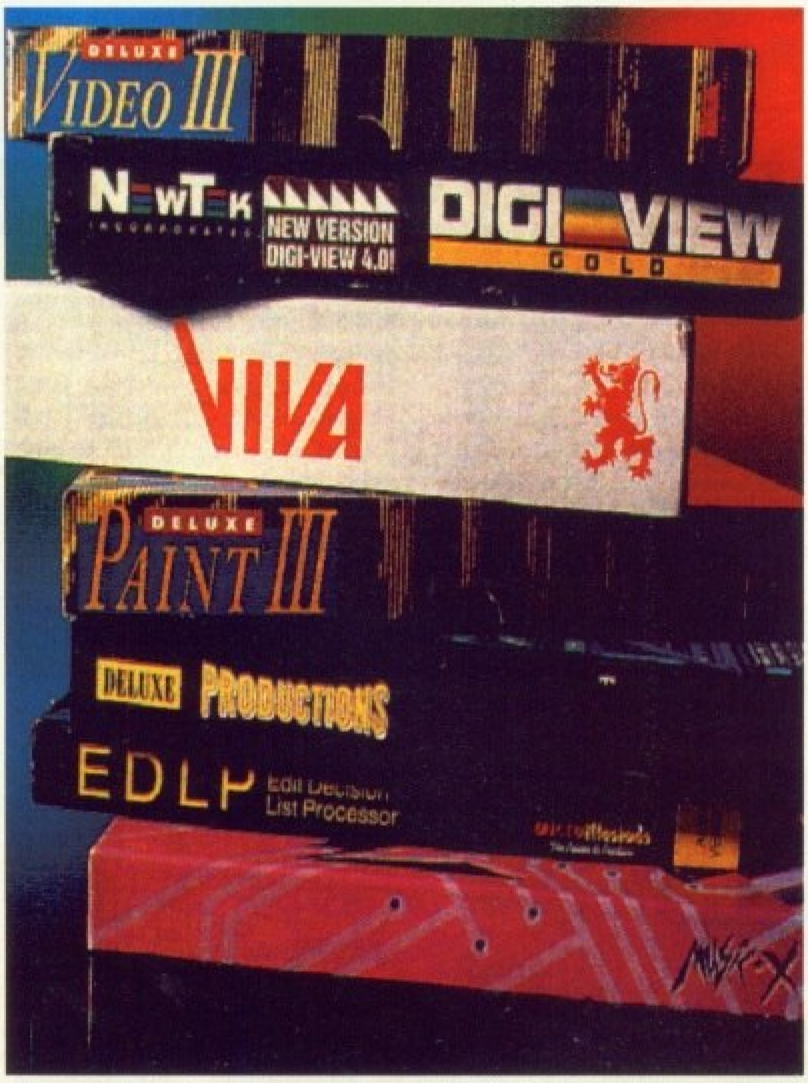
You can also right justify the text, centre it or leave it ragged. Unfortunately the current release doesn't support standard Amiga fonts, although this is planned for a future release.

Scroller doesn't just produce static screens. It can also scroll titles both horizontally and vertically in up to nine different speeds. One very nice feature is the ability to control scrolling interactively, thereby making it ideal for anything from conventional video titling to teleprompting within TV studios.

You can also dynamically control both the position and margins, enabling you to create all manner of video titling effects.

Big Alternative Scroller certainly isn't Alternative's first and last product. Already there's talk of a vastly enhanced version of the program that steals more than a few tricks from an amazing bit of video kit called the Quantel Cypher.

Details are yet to be finalised, but Alternative is feeling pretty confident that the program will be something very special indeed.



Just some of the grabbing packages available

ELAN ENCORE

Elan Enterprises have released version 2 of its acclaimed desktop presentation system, Elan Performer. Version 2. This boasts even greater support for different image and animation formats.

Full A-Rexxis is now available allowing it to be controlled by other A-Rexx compatible applications, enhanced animation editing and full NTSC and PAL compatibility.

The program enables you to build up sophisticated presentations consisting of both static and animated images. Using a unique keyboard triggering technique, any part of your presentation can be triggered at any time by assigning it to a key on the Amiga keyboard.

The UK distributors are HB Marketing who can be contacted on 0753 686000.

BOOKS FOR VIDEOPHILES

Does DTV confuse you? If so, you need a good book. The Amiga is blessed with a vast range of technical publications covering just about every conceivable application, so there are plenty to choose from. Both of the books detailed below cost £16.95 and are available from Adamsoft.

Amiga Desktop Video Guide from prolific silicon publishers Abacus, claims to be the most comprehensive look at desktop video available anywhere.

The book provides an in-depth look at the basics of DTV paying particular interest to the equipment involved and how to interface it to your Amiga.

Topics covered include genlocks, digitising and scanning, video recorders of all types and a look at the available software.

For those of you who already know a thing or two about DTV, the book is made somewhat more useful by a helpful chapter detailing a few useful techniques to help you get the most from your DTV setup.

Amiga Desktop Video, Compute!'s book is, unfortunately, something of a let down. Contents wise, it starts very well. Subjects covered include working with colour, combining audio and video, and creating animations and 3D graphics. But the book soon becomes too technical and too NTSC-orientated.

In the case of NTSC bias, the book devotes a large section to the structure of an NTSC video signal, which isn't exactly a whole lot of use to us Europeans, who use the higher resolution PAL system.

To be fair though, the sections which are actually geared towards the practical side of DTV are very good, so you may still want to give it a look.

Machine Code



This month Jolyon Ralph keeps it in the family with a discussion of the Motorola 68000 chip range

Have you got a faster processor in your machine? Are you thinking of getting one?

There are various options available from 16Mhz 68000 chips up to 50Mhz 68030 boards with maths co-processors and more 32-bit fast memory than you could happily shake a dead haddock at.

Whether you have an upgrade or not, you should be aware of what these chips can offer the assembler programmer like yourself.

Apart from the 16Mhz 68000, which is literally just a fast 68000, the other members of the 680x0 series are the 68010, 68012, 68020, 68030, 68040. All offer extra features for the assember programmer that are worth knowing about even if you never intend to upgrade.

The compatible 68010

Let's start with the 68010. This is the simplest, and pin-for-pin is compatible with the 68000 – you can unplug the 68000, plug in a 68010 and it will work.

It is fully 68000 compatible, and a lot of the instructions are faster to boot, averaging about 15 to 25 per cent faster than the 68000.

The only incompatibility is the MOVE SR,<EA> instruction, which is priveleged on the 68010, unlike the 68000. I've never needed to use this instruction, and if you do it's well documented how to get round it (GetCC call from exec.library).

The 68010 adds three new registers. The VBR (Vector Base Register) allows you to change the base address of the processor exception table. Normally if you ask for a level 3 interrupt, the processor will get the interrupt address from $0000006c in memory.

The VBR on the 68010 allows you to add an offset to this value so you can have several different vector tables in memory. If the VBR was set to $00200000 the processor would get the level 3 interrupt address from $0020006c.

This can be quite dangerous unless you know what you are doing.

There are also two AFR (Alternative Function Registers), a 3-bit SFC (Source Function Register) and a 3-bit DFC (Destination Function Register). These are used to determine whether the processor is accessing code memory or data memory – not really much use to Amiga assembler programmers and are best left to techies wanting to run things like UNIX.

68020 examined

The 68020 chip has all that the 68010 has, plus five additional registers.

The Super-visor Stack Pointer is replaced by two new stack pointers. There are the Interrupt Stack Pointer, which is the equivalent of the SSP on the 68000/68010, and the Master Stack Pointer, used when the 68020 Master/Interrupt flag is enabled.

The most important of the new 68020 registers are CACR (Cache Control Register) and CAAR (Cache Address Register). They are used to control the 256-byte processor cache contained in the 68020 chip. These registers allow programmers to directly manipulate the cache, or to disable it if necessary.

The 68020 has a new data size, the quad word. For example:

MULU #100,d1:d0

This multiplies the contents of d0.l and puts the low 32-bits of the 64-bit result into d0 and the high 32 bits into d1, turning d1 and d0 into a pseudo-64-bit register.

More address modes

There are some new addressing modes too:

- Base displacement: (bd,An) An=any address register, bd=a 32-bit memory address. This is an extension of the d16(An) addressing mode on the 68000, but it can now access 32-bit offsets instead of the original 16-bit offsets.
- Enhanced address register indirect with offset and index:Remember the nasty complex one on the 68000, the d8(An,Xi.Z), where d8 is a 8-bit offset, An is an address register, Xi.Z is any address or data register. Well, the 68020 version is improved to: d16(An,Xi.Z*s) where d16 is now a 16bit offset, and s is a scaling factor (1,2,4 or 8) with which it multiplies the Xi.Z for the equation. The register itself is left unchanged.
- Address register indirect with base displacement and index: This is the 32-bit offset version of the addressing mode above: (bd,An,Xi.Z*s), everything is the same except bd is a 32-bit offset.

If you ever find a use for all these weird address modes, I'll eat my optical mouse.

There are a couple of variations to the above address mode, but these seem to be trivial and explanation, therefore, is probably unecessary.

68020 instructions are more fun, here are the highlights:

Bcc <offset>

can now have a 32-bit signed offset, so there is no longer a size restriction on BEQ, BNE, etc. Similarly with BRA and BSR. DBcc is still limited to 16-bit offsets.

EXTB.L Dn

will sign extend Dn.B to Dn.L directly. Previously you had to use EXT.W Dn.B followed by EXT.L Dn.W.

MUL/DIV

now supports 32-bit/64bit values using the dn:dm register pair as a pseudo-64-bit register.

Bitfields:

a whole new topic with the 68020. A bitfield is an array of up to 32 consecutive bits either in a data register or, more usually, in memory.

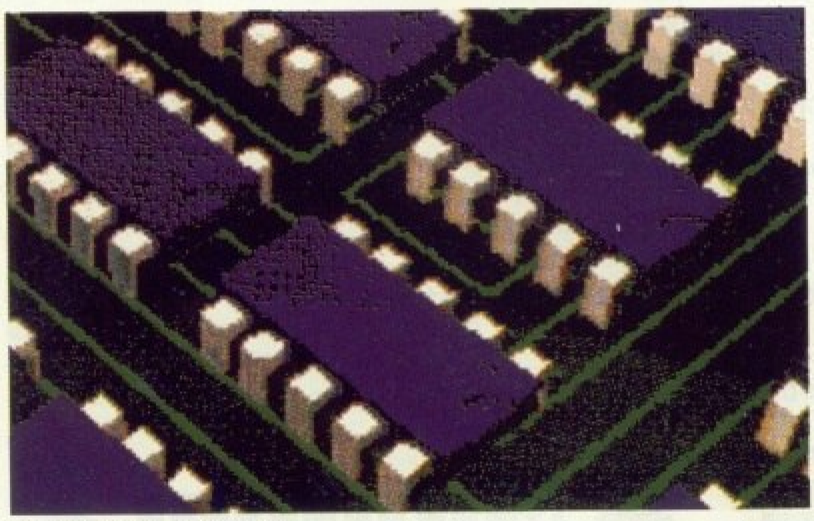
This allows the manipulation of groups of bits in memory without having to load them into registers. The new instructions BFTST, BFCHG/CLR/SET, BFEXTS/BFEXTU, BFINS and BFFFO are used.

Limitations

The 68030 doesn't really have any new registers itself. It contains an internal Memory Management Unit, compatible with the 68851 MMU, which is an external MMU for the 68020 chip. This adds several registers to the 68030, the TC, CRP, SRP, TT0, TT1 and PSR registers.

Unfortunately, neither Argonaut's ArgAsm nor Hisoft's Devpac assemblers support any of the 68010 or above processor instructions, so you will have to use either another asssembler or enter the hex value of these extra instructions straight into your code.

If you want to look further into this topic, look at the Motorola 68000 family reference manual, and the excellent book 680x0 Programming by Example, published by Howard W. Sams & Company.



Is this a 6800, 68010 or what?



To order, please use the form on page 129

See order form on Page 129

Code Clinic

Wearing nothing but a knotted hanky, Margaret Stranger casts herself adrift in C

The Amiga provides a wealth of software support that enhances the capabilities of its powerful hardware. This software support takes the form of library routines, which are special Amiga resource files bound to your program dynamically at run time.

They range over several levels from primitive device management or graphics drawing routines to intuition, which handles overlapping window displays and several input and output devices.

Future editions of CODE CLINIC will include some routines I found useful when writing the Amiga version of Fun School 2 – and many more I discovered afterwards when it was too late!

Several libraries are available for use in your applications, each containing several routines. Associated with each library is a special .fd file describing the parameters the routine takes and the registers used in assembly language. The name of each routine is used by the compiler and links programs to work out its offset from the library base.

To access a routine you must first open the library in which it is contained. This will give you the base. As many as five libraries can be open at one time.

Once it is open, the routines can be called as if they were your own sub-programs, sparing you from re-inventing the wheel.

COMPARE AND CONTRAST

In C you can call the routine by name using the normal C language conventions. In Assembler when a library is opened the pointer is stored by the program. If a library routine is declared as an external reference (XREF), the linker can calculate its offset from this pointer.

The compiler handles all these details when writing in C, so there is no need to state the routines you are going to use or to which library they belong.

For assembly language the library base must be in register a6 – if it is in any other the routine could overwrite it. The name of the routine is declared as an external reference and used as if it were a straightforward offset from the library base. The linking program takes care of the rest.

The exec library base is always in the same position, location 4, or the external reference, _AbsExecBase, can be used.

BACK TO THE PROGRAM

Several libraries are internal, for example intuition, DOS, exec, graphics, and they may differ slightly with the operating system. Other libraries, for example diskfont are disk based and are expected to be in the libs directory of the system disk.

A complete list of the library routines can be found in the fd.files directory, which is usually on the C workdisk.

The program uses a few of the routines from the DOS and exec libraries, but there are many more available. Included on the cover disk is a list of library DOS and exec routines. For each one I have listed the input, input registers, output and a short description of the routine's effect.

The program is designed to give an introduction to some of the routines in the DOS and exec libraries. The C source code file, named libsandfiles.c, was compiled and linked using Lattice C version 5.0.2. The complete listing is available on the disk, but I have included a couple of extracts here.

```
main()
{
libraries= open
libraries();
                    /*open the libraries*/
if (libraries==0)
{cleanup ("no\
libraries") ;exit
(1);};buffer=
AllcMem
(1024,6539);
                    /*allocate memory buffer*/
if (buffer == 0)
{cleanup("no
memory"); exit
(1);};Delay(500);
                    /*wait a few seconds*/
bytes=readfile();
                    /*read the source file*/
if (bytes == 0)
 {cleanup("no
file"); exit(1);};
consolefile
handle=Output();
                    /*display it on the screen*/
Write(console
filehandle,buffer,
1024);diskfont
base=OpenLibrary
("diskfont.library,
0);if (diskfont
base == 0)
                    /* open diskfont library*/
{cleanup("no
diskfont library");
exit(1);};clean
up("ok");
                    /*close libraries, free buffer*/
return(0);
}
```

When run, the program opens the DOS, graphics, intuition and diskfont libraries, and waits for a few seconds. If they fail to open the program exits via a cleanup routine, which displays a "no libraries" message.

The program attempts to allocate a memory buffer, but if insufficient memory is available the message "no memory" is displayed on exit.

The program looks for the source code text file to read in. If the file is not found in the current directory, the program will exit at this stage with the message "no file".

Any text file can be used provided the filename is included correctly in the source code. If all is well, the first 1024 characters of the file will be displayed on screen.

The program then attempts to open the diskfont library which is disk based rather than internal. It should be present in the libs directory of the boot disk, otherwise this library will not open and an appropriate message will be returned.

A GRACEFUL EXIT

```
cleanup
(errormsg)
                    /* leave as you would wish *
/
{
                    /* to find      */
printf(errormsg);
if (buffer != 0 )Free
Mem(buffer,1024);
if (dosbase !=0)
CloseLibrary(dosbase);
if (graphicsbase
!=0) CloseLibrary
(graphicsbase);
if (intuitionbase !=0)
CloseLibrary
(intuitionbase);
if (diskfontbase
!=0) CloseLibrary
x(diskfontbase);
return(0);
}
```

The program finishes with the cleanup routine displaying the message "ok". This routine allows the program to exit gracefully, freeing memory allocated and closing libraries opened during the program.

Freeing memory that was not allocated or trying to close a diskfont library that failed to open causes a software error, and a certain amount of embarrassment.

Allocated memory is not automatically freed when a program finishes and could run out eventually if the offending program was run often enough.

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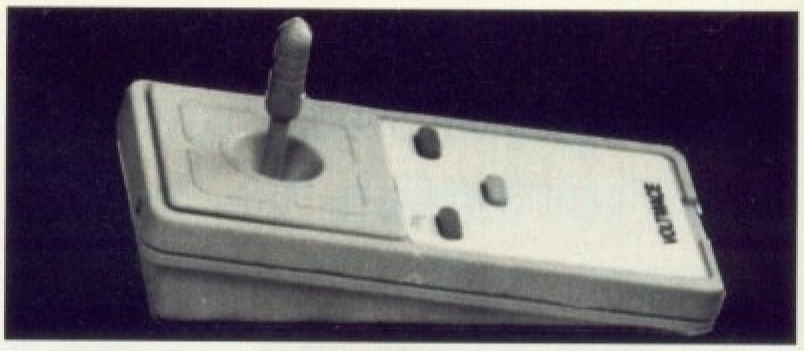
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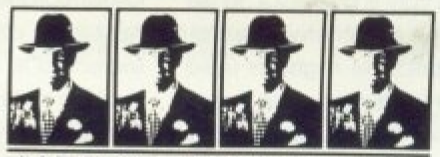
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Music

The hottest news on the Amiga music scene from Jason Holborn

Very few companies like to restrict themselves to just one aspect of computing on the Amiga, but this is just what Omega Projects has done. The company's latest product is a 4-channel audio mixer which was developed with sound sampler fanatics in mind.

The device offers four audio inputs, which are combined into a single output signal. Each channel offers its own independent volume control knob, plus an extra master volume control for the combined signal.

The unit certainly seems to be good value for money. Most cheap mixers introduce a large amount of background noise, but the Omega mixer seemed virtually silent.

Although Omega see it as being of particular use with sound samplers, it's also ideal for desktop video and multi-media applications.

The mixer is available in two configurations. For £35 you get the mixer complete with a dynamic microphone, but for an extra fiver, Omega will provide you with a much better quality Electret mic.

Also available from Omega is their acclaimed Sound Trap 3 mono audio digitiser.

For £29.95, you get a high quality sampler that works on all Amigas – including the A1000! It has a built-in printer pass-through connector and comes complete with the necessary sampler software.

For the price, Sound Trap 3 is certainly a cut above the rest. The sound quality is excellent and it's very well designed.

If you're after a MIDI interface, then Omega's Mini-MIDI is a good bet. What's so nice about Mini-MIDI is that the interface comes complete with built-in MIDI cables, so there's no reason to buy them separately.

Mini-MIDI is currently being sold for just £20, which also includes a copy of the PD music program Med 2.13. Omega is on 0925 763946.

GFA GOES MUSICAL

If you thought GFA Data Media was all about programming languages and compilers, then think again. The company has just tied up a deal, which will effectively give it exclusive distribution rights to a range of very powerful MIDI software from Digigram.

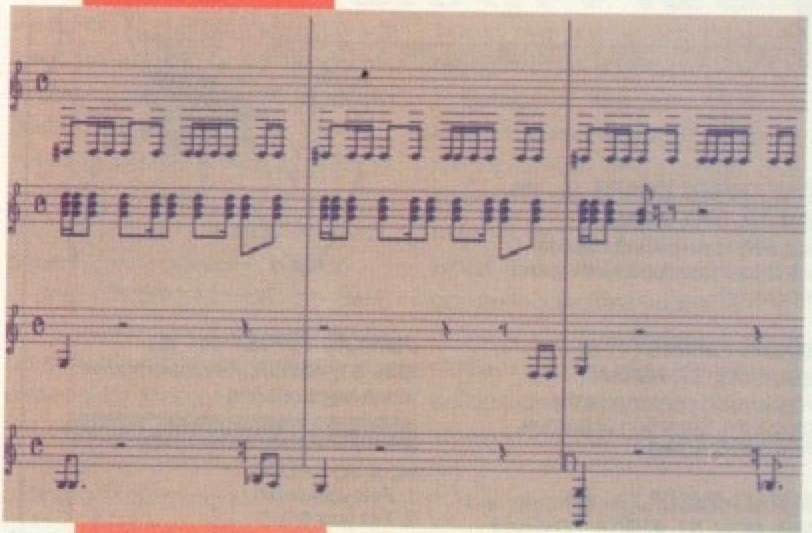
Although none of the products are particularly new, they were very difficult to obtain. Currently, the list of products includes Track 24, Studio 24 and Big Band.

Most promising of all though is Pro-Score, a sequencer scoring program which promises to be something pretty special indeed. For more injformation give GFA a bell on 0734 894619.

SOUND OF KORG

If you're a synth owner, then you'll already know how expensive sound library cards can be. Take Korg's brilliant keyboard workstation, the M1. Sound cards for this beauty cost a staggering £80. What's more, these cards contain just a single bank of sounds, so building up a decent sound library can be an expensive affair.

Help is at hand, however. The Music Matrix (0592 714887) has just launched an autobooting Amiga disk which contains no fewer than 500 new sounds for the Korg M1.



Anyone care to let us non-musical buffs know what this is?

Also included is a utility to enable you to dump the sounds out to your M1 and even store your own on disk. Obviously, you'll need a MIDI interface to be able to use it, but they're very good value for just £30.

I dumped the sounds into my own M1 and was pleasantly surprised by both the quality and originality of the sounds. I fully intend to make extensive use of many of the sounds in my own music, which is a recommendation in itself.

As an added bonus, Music Matrix also includes the default M1 sounds on the disk at no extra charge, so you don't have to worry about losing your factory presets when you dump the new sounds into your M1. As we speak, the Music Matrix is already hard at work on a similar pack for the Kawai K1.

Also worth a mention is the Music Matrix disk magazine, also called Music Matrix, which is dedicated entirely to music making on the Amiga.

It contains a wealth of music-related product reviews, music programming tips, tutorials and so on, plus a generous helping of music utilities and programs.

For synth owners, there's usually a selection of sounds for use with keyboards such as the Roland D-series and Yamaha FB01.

Each issue of the Music Matrix mag costs £10.

NEW MUSIC BOOK

If this month's mega-feature on music wasn't enough to quench your thirst for knowledge, then Abacus's latest book release may be just what you've been looking for. Entitled Making Music with the Amiga, the book offers a comprehensive guide to all things musical on our favourite computer.

The first couple of chapters are dedicated to music theory, providing a fairly in-depth look at such things as the fundamentals of music notation and the elements of sound synthesis.

For those of you feeling adventurous, there's also an additional section detailing the construction of both a sound sampler and a MIDI interface.

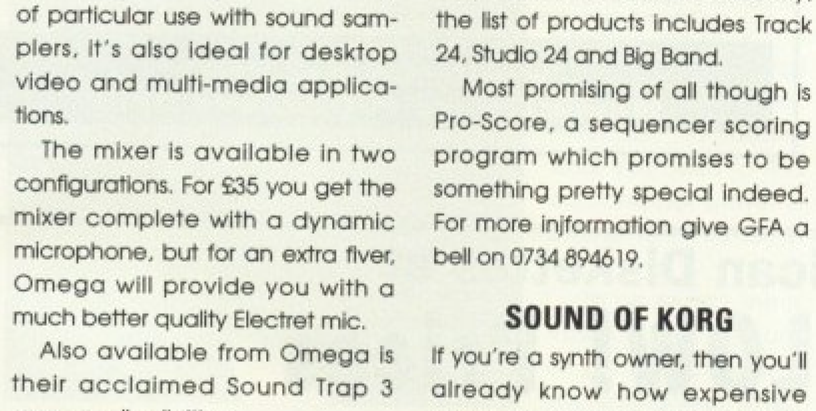
Both come with step-by-step instructions for building each, complete with the necessary circuit diagrams.

The kits cost considerably less than their commercial counterparts, and you get the added satisfaction of building them yourself.

After the theory, it's onto more practical matters with a look at music programming in a number of popular languages, including both GFA and AmigaBASIC.

Topics covered include the basics of sound generation, hardware-level music programming in GFA BASIC, the music- specific IFF forms (8SVX and SMUS), MIDI fundamentals and sound sampling. It even provides an in-depth look at several major music packages currently on the market – Aegis Sonix, AudioMaster II, Deluxe Music, Dynamic Drums to name but a few.

Making Music On the Amiga is available for £29.95, which also includes a free disk containing all the source code examples, from Adamsoft who can be contacted on 0706 524304.



Dynamic Drums - one of many the programs discussed in Abacus' latest publication, Making Music with the Amiga

Eddie McKendrie provides a whole new dimension to adventure games with a delve into MUGS

In these hardware indulgent days of blitters and DMA sound, entertainment software has leapt from one audiovisual sensation to another, each new production getting more sophisticated and exciting than its forerunner.

It is perhaps not surprising then that the humble text adventure game has been relegated to the "disks to format" pile.

Maybe because it's just not fun any more to sit and watch a stream of ASCII pass by as you fumble your way through a dense forest without a torch – and where on earth can you find one? Often you will play an adventure game, and get to a certain point.. and just stay there.



Matthew Ward, better known to his friends as Ambushbug, proving that the road to immortality on his Trash MUG is a rocky one.

The manuals do their best to make the plot sound exciting, and give as many hints as the author feels necessary, but all too often this just isn't enough. Within seconds your trusty Amy gets the Spock grip and Xenon II finds its way into the drive.

This problem is reduced quite a bit if you can find someone else who is interested in the game you are playing. It is often easier, and more enjoyable, to solve complex mental puzzles with like minded people. After all, they might have batteries for your torch! It is on this principal that Multi-User Games breathe new life into monotonous text adventures.

A Multi-User Game – or MUG to its friends – is, in basic terms, a text adventure game that dozens of people can play at once.

Within a good text adventure, players sometimes encounter characters created by the game's coder. These characters are designed to make the game a little more enjoyable, or in some cases hazardous!

MUGs also have their fair share of distractions, but like you, they are real people.

The basic scenario is exactly the same as a typical adventure game, accumulate a certain number of points in order to finish the game. This generally involves collecting lots of treasure and solving puzzles, increasing your score to the required level.

Now you would think that with lots of other people playing the same game things would be much easier. After all, no matter what you need to find out, another player is bound to have some ideas.

To an extent this is true, but don't count on getting all the help you would like. When lots of people do the same thing, be it rushing for a train or counting paper clips, it becomes competitive.

The same thing applies to MUGs. Unlike normal adventures, completing a MUG is only the beginning! When the toil is over, you can continue to play, with extra status as the reward for completing your crusade.

Generally speaking players become immortal, with significantly enhanced powers in the game. Such status can be used to help new players, or to be a pain of awesome intensity.

It is all part of the fun, although immortals who regularly abuse their advantage soon gain a reputation that even the most cold heart would have trouble sleeping with.

Friendly players will usually help newcomers get started. As you gain practical experience and are elevated to higher levels survival becomes the name of the game. Everyone at a high level wants to be the next immortal!

Points are gained via a number of means. Solving puzzles and quietly collecting treasure is one way, providing you are not in a hurry.

Unfortunately for you, the devious people who created MUGs have taken advantage of the less benevolent face of human nature. It if often easier to gain points by using less sociable tactics.

There is nothing MUG creator extraordinaire Matthew Ward likes to see more than a good honest fight to the death between players in one of the games he has concocted.

There is one important difference between single user adventures and MUGs. Playing a normal adventure, you can save a position to disk and keep it safe in case you do anything silly. This allows fairly painless resumption should you be killed. This is far from the truth on MUGs. Death by whatever means, fair or foul, is terminal. When you lose points it is just not possible to restore them.

There is nothing more frustrating that working hard for two hours collecting treasure only to be killed by another player, as any dedicated MUGer will tell you.

On any good MUG you will suffer your fair share of injustices at the hands of others. Most serious players demonstrate little sympathy with your desire to beat them to the top of the pile.

Always be suspicious of anyone who asks if they can look after your treasure for a while, or 'borrow' your weapon! You will doubtless also witness many interesting demonstrations of magic powers... competing players have a habit of illustrating by example.

The question "What does Hobble do?" can often lead to a stunning inability to move. Only ask what "Zap" does if you are planning to go away for a while.

Another important factor in MUGing is roleplay. The whole game would be pretty boring if you didn't make an effort by acting the part. After all the whole scenario is in your imagination. Each MUG has its own theme and there are many to choose from.

Europe's biggest MUG is Shades, versions of which are running in Britain and France. The Shades world is a step back into medieval times, when knights wore armour and computer games loaded from cassette.

The landscape features a magnificent castle, many intriguing woods and forests, a splendid mansion and an enchanting old city.

The mystique would totally evaporate if its players didn't make an effort to blend in with their surroundings. Fred from Clapham and Michelle from Brixton are not amazingly convincing names for peers of the medieval realm.

It pays to research a character and built up a persona for playing. It all adds entertainment value and fun to what could otherwise become just another boring adventure.

MUGs can be much more than just text. Well organised ones have regular meets up and down the country, where players can meet each other in the flesh, exchanging views, ideas and even friendly insults!

There are plenty of Multi-User Games to choose from. Most people should find something of interest. By far the most widely available games are Shades and Trash, both of which live on the UK Prestel system.

Trash is a space age fantasy adventure which involves cleaning up a futuristic multiverse.

Prestel does not have a monopoly on MUGs by any stretch of the imagination. Other national games worth a mention include MUD (Multi-User Dungeon), another very popular medieval adventure, and Federation, a delve into the space race.

Finally, there are more small MUGs in the UK than space permits mentioning. Finding one local to you should not prove too difficult. To get started on most MUGs all that is required is a modem, some decent comms software, a little skill, and a lot of luck!

Your DTP prowess can be considerably enhanced by a decent art package. Jason Titchberry investigates

If there's one mistake more common than any other in DTP it is the overuse of fonts. Most packages only come with two or three and that's all you really need – a good solid type for headlines and a nice easy to read body face.

All manner of varieties of subhead, crosshead, by-line, standfirst and so on should be derived using these. It's not difficult. Mind you, I see what you mean about things looking a bit "samey" after a while. However, the answer is not to incorporate more fonts, but to revamp the ones you already have.

How are you supposed to do that? It's obvious – ProDraw. I have always maintained that after Dpaint and Pixmate, the most useful package to aid you in all things desktop is ProDraw.

Because it is a structured art package it follows the same anti-jaggies philosophy as your DTP program – it outputs at the resolution of the printer, not the screen.

Aside from the fact that it is jolly useful for running up no end of tables, charts and illustrations, it has a considerable value in the "special effects" department. In short it is the ideal solution to our boring display problem.

Let's consider just one case. Suppose you often have a small spot at the foot of a page called, well I don't know, something stunning. The trouble is when you use normal headline text, even if you reverse it out, it doesn't detach itself from the rest of the page and tell the reader that it is something special.

Suppose instead of just reversing it out you gave the text a graduated tint as well. How? Well, this is quite easy in ProDraw. Select the text icon and type in your heading.

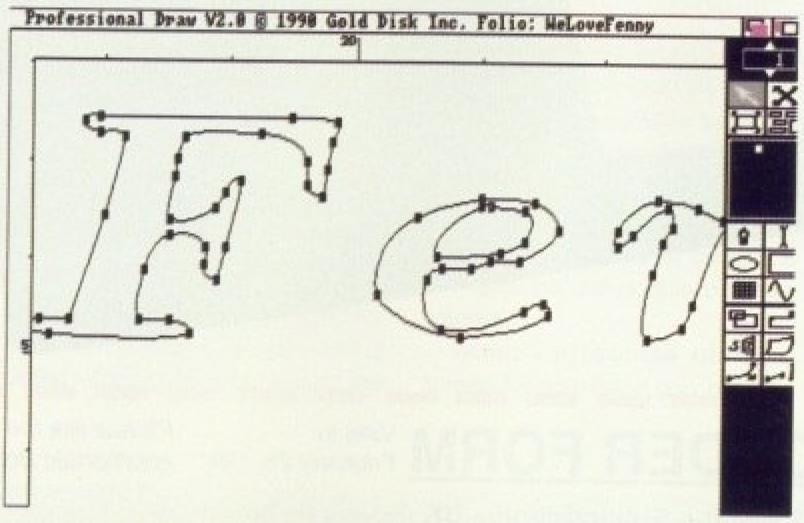
Now, before you do anything to the text you must turn it into a group of objects so that we can fiddle with it. Having done that it is but the work of a moment to draw a box around it.

Check that fill is selected "off" for both sets of objects. Now select all the objects together and choose 'Make compound object' from the 'Object' menu. All the files are now inextricably linked.

To complete the reversing effect turn "fill" on and turn off the wireframe graphics option. We now have reverse text – so what, there are easier ways to do it! There are indeed, but in this case the text is not just white, it is transparent.

This means that you can place any graphic behind it. To create a graduated pattern simply draw a filled black box running over the top of the text, a filled white box over the bottom and use blend.

Then bring the text box back to the front and there you have it, the object of your eyes' desire.



Tracing text works – but may require some touching up

Trace

If you want to include another font, but it is only bitmapped and not a scalable one, there is a way to do it. Nothing looks more terrible on a page, especially if it is output on a decent printer, than a bitmap font. This is even more noticeable when it is scaled up for use as a section heading or a masthead.

One thing that is possible is to sort of convert your bitmap text to a structured object, eliminating the nasty jaggies. This can be achieved by a bit of trial and error with the trace program – supplied with ProDraw.

There is, however, an element of chance in this because you have to choose the "fiddle" factor. If you get trace to faithfully convert a bitmap to the highest accuracy it will trace around the jagged edges and make them, if anything, worse. Get too haphazard though, and the text will look like so much plasticene.

Mastheads

Mastheads are a very important part of your publication – they are your corporate logo. It is not really enough just to have larger than normal text with a few graphics thrown in.

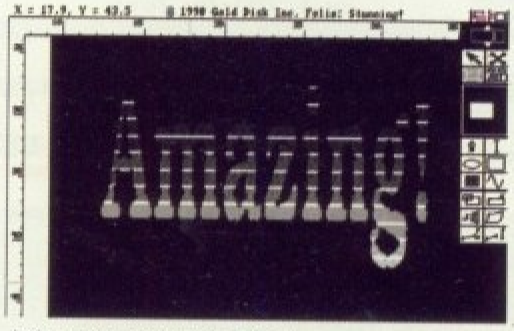
Using the same font, with the aid of Prodraw you can edit individual points of the text to make distinctive or merely emphasised. See the example here from the masthead of my own publication – the Curried Eel. Note how the "C" has been enlarged and bent around the following letter.

Next time

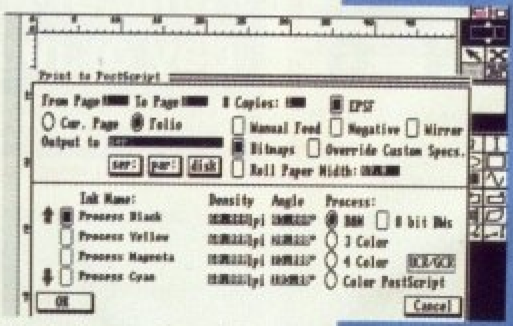
That's about it for this month. Next time we will hopefully be looking at the new DTP package just in from Germany, Saxon.



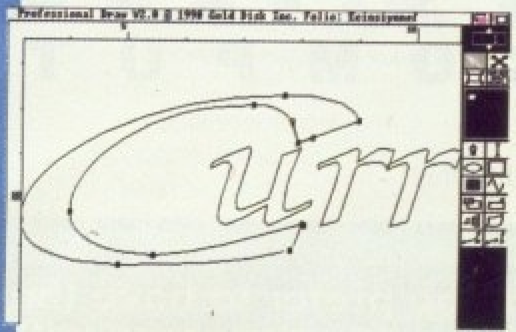
Encapsulated Postscript output is useful if your DTP package isn't Prodraw compatible



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More tricky coding from the AMOS master

Amos

Hello AMOSers, did you have a nice Christmas break? I've been playing with lots of bits and pieces over the last couple of weeks, including VIDI Amiga the excellent video digitiser from ROMBO.

Gary Symons has written a nice little assembler in AMOS and is just putting the finishing touches to some test routines, which will allow AMOS owners to grab directly from this interface!

If you came along to the Computer Shopper show you may have met Francois Lionet, the creator of AMOS. You may also have seen a couple of new things for AMOS including the new AMOS demo which is available from the official AMOS PD library run by Sandra Sharkey – give her a bell on 0942 495 261. Francois says hello to all Amiga Computing readers, and he's going to send me copies of the AMOS articles and programs which he publishes in some French Amiga magazines.

Now, to round off our look at some of the more advanced features of AMAL, we're going to do a bit of work with different autoback modes.

To understand how this system works, it's necessary to grasp the principles behind double buffered screens.

When you double buffer a screen for animation you are producing a copy of a screen, which remains invisible at all times. When you display a BOB or draw something on a screen, it is first written to this invisible LOGICAL screen and then automatically flipped with the visible PHYSICAL screen. Using this method the user remains oblivious to the drawing process, which may take a couple of vertical blanks.

When a screen is not double buffered, the drawing process is seen by the user as a very nasty flicker!

The autoback system controls the method by which all graphics operations are carried out and there are three autoback modes.

Autoback 2: This is the default setting for autoback whenever you open a screen. It allows any graphics operation (such as plot, box and so on, to be performed behind all BOBs.

Unfortunately, it's very slow because of the way it works. It actually performs all of the drawing operations both graphics and BOBs, twice, which for a game is pretty impractical!

Autoback 1: This is a compromise between modes two and zero. You can draw on both the physical and logical screens but if any BOBs are in the way strange things will happen! This is ideal for hi-score panels in games such as Pukadu, (available from the AMOS PD Library.

Autoback 0: When you want to ignore most of the automatic updating methods used by AMOS this is the mode to use. When mode zero is invoked, all graphics operations are performed only on the logical screen. This allows you to generate your own backgrounds automatically without having to use the slow mode 2. Try typing in this program:

```
Load
"AMOS_PROGRAMS/BIG_AMOS.
ABK"
Flash Off : Cls 0 : Get Sprite
Palette Double Buffer Autoback
2
Wait Vbl
Bob 1,50,50,1
Wait Vbl
Locate 0,10
For LOP=1 To 8
Print "PETER";
Next LOP
```

When run, you'll notice that the text is printed underneath the big 'A', as you can see the printing is quite slow. Change the AUTOBACK command to read AUTOBACK 1 and run the program again. This time the text is printed on top of the big 'A'. Now change the AUTOBACK command to AUTOBACK 0, this time the text does not appear at all!

The reason for this is because the operation has been carried out on the logical screen and has not been copied to the physical, to show the text, go to direct mode and type SCREEN SWAP. The WAIT VBL commands are just there to make sure the BOB is drawn before any other command is executed.

This is all very nice but it doesn't really explain why the BOBs always appear, even though the autoback mode is set to zero.

The autoback mode controls the graphics operations, to take control of the BOBs we must switch off the automatic AMOS BOB updates using the following command

```
Bob Update Off
```

If you insert this just before the DOUBLE BUFFER command then run the program, you'll see that nothing appears. Even if we go to direct mode and type SCREEN SWAP, only the text appears.

Where's the BOB gone? Well, because we switched off the update, AMOS will not actually draw the 'A' until we tell it.

Insert these lines at the end of the program

```
Bob Draw
Screen Swap
```

When you run the program, you'll see that the BOB is once again drawn over the text! Of course the beauty of the autoback system is that you can change which mode you are in at any time during your own programs. As a more dramatic demonstration of autoback, type in the next program and run it.

As you can see, this method is pretty fast and can be used to achieve some rather good effects.

Now try changing the autoback mode to 2 then run it. As you can see, it's possible to spot every star being drawn and is really unsuited to doing things like this. Anyway that's it for this month. Now with all the boring stuff over we can get on with writing our game over the next couple of issues. Have fun and happy new year.

```
Set up screen
Load
"AMOS_PROGRAMS/BIG_AMOS.AB
K"
Screen Open 0,640,200,4,Hires
Flash Off : Curs Off : Cls 0
Colour 1,$457 : Colour 2,$669 :
Colour 3,$99F : Hide On Double
Buffer : Autoback 2
' Generate stars in array
AMOUNT=60
Dim COORDS(AMOUNT)
Randomize Timer*Rnd(33)
SCR=Screen Width
For LOP=1 To AMOUNT Step 2
  COORDS(LOP)=Rnd(SCR) :
COORDS(LOP+1)=Rnd(200)
Next LOP
' Move stars
Do  C=1
  Cls Logic(0)
  For LOP=1 To AMOUNT Step 2
    If LOP>15 and LOP<29 Then C=2
    If LOP>28 Then C=3
    Plot
COORDS(LOP),COORDS(LOP+1),C
    COORDS(LOP)=COORDS(LOP)-
(LOP/2)-1
    If COORDS(LOP)<0 Then
COORDS(LOP)=SCR-1
  Next LOP
  'do bobs here
  Screen Swap : Wait Vbl Loop
```

Ear shattering offers for Amiga Computing readers

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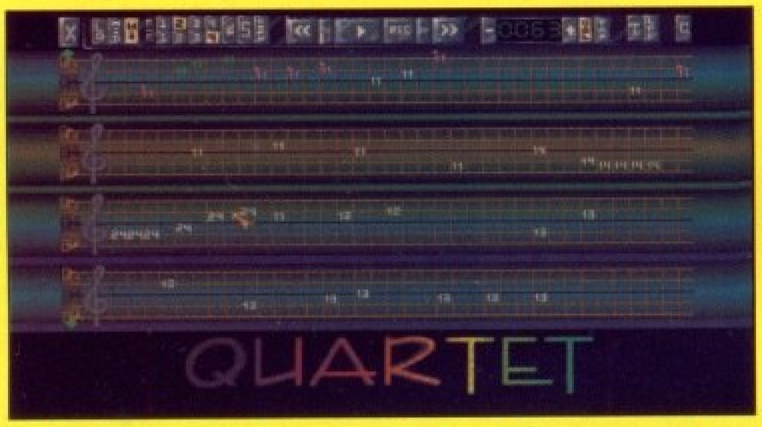
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The fifty watt speakers consist of a woofer, a mid-range and a tweeter for the highest possible sound quality. Thumping bass, crisp trebles: You'll hear them all with incredible clarity.

The Amiga Soundblaster comes complete with mains adaptor and full instructions. No alterations to your computer are required – just plug in and switch on to re-discover sound on your Amiga.

Buy all 3 for just £99.95

QUARTET



Make beautiful music on your Amiga

Quartet is a stunning sequencing package that will allow you to compose anything from a jingle to a symphony.

Making full use of the Amiga's unique four channel stereo sound system, Quartet is equally at home playing Depeche Mode or Debussy. Quartet comes complete with complete instructions, a disk of full of sound samples and full source code to allow you to intergrate your tunes into your own programs.

What's more, Quartet is MIDI compatible, so you can connect a suitable keyboard or synthesiser to enter notes directly.

It's the ideal sequencer package to complement the excellent Master Sound sampler

– Amiga Computing, August 1990

Quartet comes with full instructions and two disks for £39.95



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Best of all, the comprehensive instructions will soon have you creating your own public domain demo disks complete with IFF picture files.

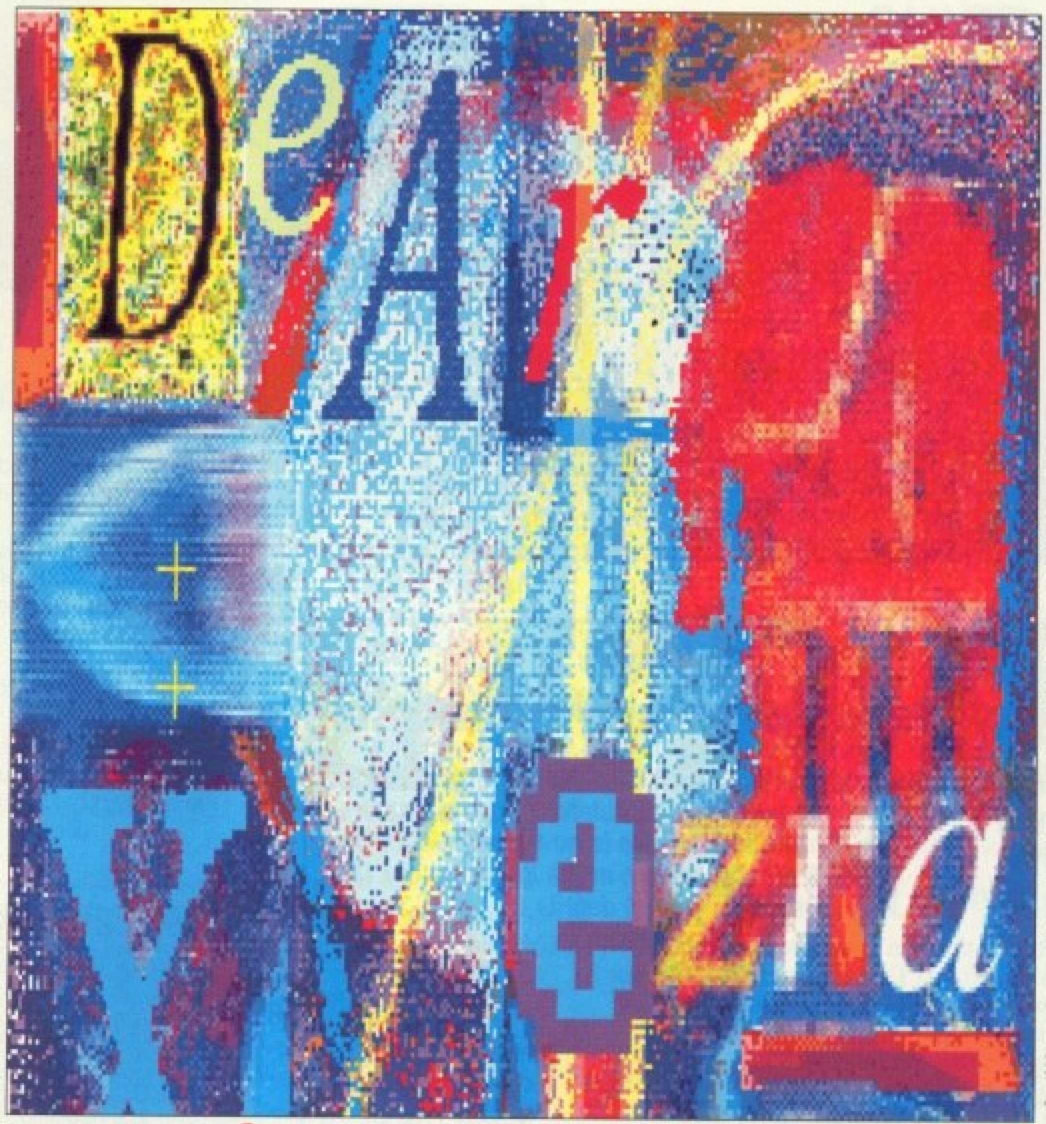
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– Amiga Computing, May 1990

See order form on page 129



Despatches — Write to Amiga Computing, Europa House, Adlington Park, Macclesfield SK10 4NP

Wot fame?

There I was laying in my weekly Sunday hot bath perusing the latest copy of Amiga Computing when I glanced at your letters page and WOW! I nearly drowned when I saw that you had published my letter! Visions of fame, kudos, fortune and so on floated before my eyes. But wait a minute, where was my name? You'd forgotten to put it in! Now no-one believes me when I say that's my letter.

Speaking as a hairy, 260lbs, six feet tall biker, I'm sure you won't leave out my name if you ever publish another of my letters (fat chance of that now!).

Right, whingeing over and now for a serious question. I use my Amiga 500 plus 512K expansion, second drive and MPS1230 printer at home for my personal letters etc., with the Workbench Notepad device as I'm lazy and it works with relative ease.

I use a Psion Organiser II with a letter organiser at work to take notes and so on and I was wondering if there was a public domain utility program that would let me upload Psion data into my Amiga?

The Psion has its data port and getting a lead for it would be no problem as I'm an avionics technician by trade so I can make one to whichever port in the Amiga is appropriate.

As previously mentioned, I'm lazy, and while I could probably write the program myself, if there is already one written it'd save me some evenings away from Red Storm Rising and could be worth a few beer chits (I believe in shareware).

D A 'Kuddles' Shreeve, Norwich, Norfolk.

Consider yourself printed. Hairy biker, huh? Ever been to P 'n' H Motorcycles in TOWN? Probably only if you're into British bikes. Anyway, where was I? Yeah, Psion organiser, right? There are two possible solutions. One is to throw away the Psion and get a decent portable computer, such as an Amiga in a suitcase, the other is to read this month's technical help pages.

What Katie did...

Hello, it's Katharina again. Once more you have saved my life, the Universe and everything, not to mention my sanity. After reading your response in my November issue of Amiga Computing I took your advice and bought Arnor's Protext V4.2

I am obliged to say it is the best program I have ever had the pleasure of using on an Amiga. It is fast, straightforward and although it makes few concessions to user-friendliness, I would recommend it over cute and furry word processors every time.

I am already saving my pennies towards the upgrade as it enables the definition of symbols and keyboard layouts. As a languages student, I should very much like to be able to type in Russian - I hate writing everything by hand now! I know someone who uses Locoscript on an Amstrad, but obviously that is incompatible with an Amiga.

I intend to solve the lack of graphics support by purchasing the complete PageSetter II. One company advertising in Amiga Computing is selling this program at an affordable £35. Kindwords, on the other hand, will be having a deep and meaningful discussion with the dustbin.

I should like to add that I love the new-look magazine. It's definitely a case of the best getting better. There have certainly been a lot of changes, especially to the postbox section which is now the very sophisticated Despatches.

Katie Spencer, Basingstoke, Hampshire

STP dilemma

I use BBC Masters, Bs and an A3000 and I own an Amiga. But I cannot imagine, from the packages I have seen, using the Amiga for desktop publishing, it's simply too slow!

PageSetter II is nice enough from the look of the excellent demo you supplied, but you only get two fonts and the rest cost £8.50 each! What's more, there's only one border (a plain black line), text can only be horizontal, there's only one type of shadow and on and on.

It is not really cheap when compared with Poster for the Archimedes which comes in at about £80 with 18 fonts and loads of other features. If the Amiga is going to get serious then it needs turbo-charging for starters. Gold Disk need to take a look at the competition.

Chris Mullins, Horfield, Bristol.

Provocative stuff and I'm sure there'll be lots of readers who don't agree with you. Not having first-hand experience of the Archimedes (I cut my silicon teeth on a B with 32K), I don't want to argue the point, but we'll happily print letters from the opposing camp.

Sound bet?

This is indeed an unusual request and only written because I am unable to get help locally. I do not own or use an Amiga computer, but it is my intention to buy one provided that I can obtain the answers to a few questions. Like many of us, have been misled in the past and being realistic have accepted that one has to pay a price for gaining experience.

To get straight to the point, do you think that some kind Amiga owner would record on tape samples of the type of music one can produce with the Amiga sound chip. I am aware that the Atari is very good at music – via MIDI – but as in my present machine (Amstrad 6128) the sound chip results are not what I'm looking for.

I have been told that sound reproduction on the Amiga is fantastic so I really need the chance to hear what it is capable of. If successful then you can count on another Amiga 'amigo'. If one of your subscribers could con-

ADVERTISERS' INDEX

tact me I will gladly provide tapes and postage and all letters would, of course, be answered.

Although as yet I am unable to use the disks attached to your journal, I enjoy reading all the articles and comments. Also, I feel that as a result of your presentation, I am more enlightened as to the capabilities of the Amiga. Thank you.

R H Fisher, 32 Copinger Close, Canterbury, Kent CT2 7DJ.

Thousands of philanthropic readers will be recording the fantastic Christmas tune from the last issue on a tape and bunging it into the post for you. Watch and wait.

Amiga 1 - Atari 0

I have just finished reading the new-look Amiga Computing and it's brilliant. I don't see why the cover logo was changed though, and why don't we get a glossy cover and thicker paper like Atari ST User?

Until a couple of months ago I owned an Atari 520STFM but after talking to my local computer shop about the Amiga, I traded it in for an Amiga 500 Screen Gems pack.

I think Commodore provide much better manuals than Atari although the instructions don't seem to include the 'Graphics Select 2' options when it talks about 'Preferences'. Another thing is that, excluding Beast 2, the games are rubbish, and why isn't a word processor included? However, I recently bought Publishers' Choice, this I found easy to use with excellent printouts.

Are there any plans at Interactive for a weekly mag or an Amiga quarterly like ST World?

Trevor Booth, Etchingham, East Sussex.

Glad you like the mag, have fun with your Amiga, you made the right choice. Quarterly? Our readers would never forgive us if we didn't give them their monthly silicon injection.

Beginners code class?

I own (dare I mention it?) an Atari STE and an Amiga 500 both with 1Mb of RAM memory and for each machine I have HiSoft's DevPac 2. I also have a number of books on machine code programming.

Now to the point. I can't make head nor tail of it (machine code that is). So 'd like to ask you if you would run a series for the beginner in machine code.

I want to mainly program demos and games but my experience with programming has only been with BASIC and Pascal and they're not really good enough. I hope you will run a series.

B Roberts, Perth, Western Australia.

We already have a machine code column running in the Almanac at the moment but it is very definitely pitched at the techies. On that basis, there would seem to be a pressing need for a beginner's slot which could, from first CLI and so on principles, move via high-level programming to machine code, hopefully in easy steps.

So when will this new series appear? Don't know yet, I'm afraid, but rest assured we have the interests of beginners at heart and we'll run something very soon.

Cries for adventure

Firstly I would like to congratulate you on your delightful magazine.

Secondly, I have had an Amiga for nearly one year now and am considering buying AMOS - the games creator. I am nearly 12 years old, but I have a reasonable knowledge in computing, especially 68000 BASIC. Do you think it worthwhile for someone of my age, or might I find it too complicated.?

Thirdly, do you think it necessary for me to buy a second disk drive or is it likely I will be able to manage by saving CLI files, such as Path, to the RAM disk.

Also, could you please start an adventure section as I love text adventures and think they are a lot better than wild shoot-em-ups.

Paul Townend, Leeds.

Buy AMOS. If you're used to using Amiga BASIC, then AMOS is the next step up the programming ladder. It's very powerful yet easy to learn.

On the need for a second drive, then you really have to weigh up the expense with the need. If you have the money and don't need it for anything else, buy one. Otherwise make do with the RAM disk.

Adventures, huh? Maybe, if enough of you write in requesting a column...

Gribit's Gone

I am a new Amiga owner and haven't really got the hang of using it as a computer as opposed to a games machine.

The children obviously like playing games on it and after a few goes on Gribit they found out how to change screens then save them. However, after doing this a couple of times and then playing with other games, they returned to Gribit and found it wouldn't load. It gets as far as where the screen says "Loading Sprites" and then there is a loading error telling us that it is not available. Have we unwittingly wiped the disk?

Please tell me what to do to get my game back.

Lyn Richardson, Chorley, Lancashire.

What's probably happened is that you've saved a screen to a unprotected game disk and corrupted it. If that's the case (and I'm pretty sure it is...) it's ruined. Try talking sweetly to the software house – you never know!

I take it all back!

On the 14th October I wrote to you with regards to software protection using dongles and the like. I mentioned, as an example, that my Dad lost the manual to OCP Art Studio. Since then my Dad has 'phoned Datel and explained the situation. It is worth noting that Datel very promptly sent my Dad a replacement completely free. I still maintain that such software protection is unnecessary but it is a good indication that Datel offer excellent customer support.

Mark Ford, Luton, Beds.

All's well that ends well...

Polish pirate problems

We have about 10,000-15,000 Amigas here in Poland, mainly A500s although I have seen an A3000. There are two local Amiga magazines but these only have a few pages. However, thanks to social and economic reforms in Poland we can now buy Western computer magazines, yours included..

Software in our country is 99.99% copied. This is the fault of a lack of laws governing software protection. You can obtain a copy of every new game or serious program for about £1.50 at any Saturday computer bazaar. I personally think this is very sad because no one will sell original software in Poland for this reason.

Could you please answer the following:

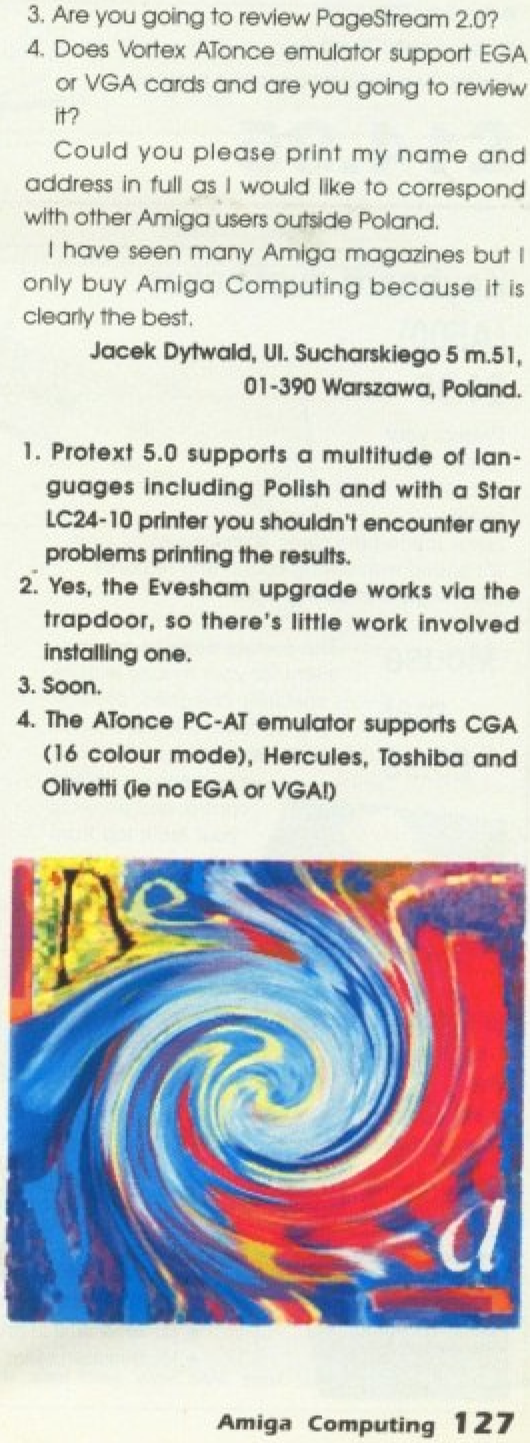
1. How does Protext 5.0 support Polish? I have a STAR LC 24-10 printer and I am not sure whether Protext will allow it to print Polish fonts in text mode.
2. Can an Evesham Micros 1.5Mb memory expansion be fitted like a A501 unit or will I have to do some work?
3. Are you going to review PageStream 2.0?
4. Does Vortex ATonce emulator support EGA or VGA cards and are you going to review it?

Could you please print my name and address in full as I would like to correspond with other Amiga users outside Poland.

I have seen many Amiga magazines but I only buy Amiga Computing because it is clearly the best.

Jacek Dytwald, Ul. Sucharskiego 5 m.51, 01-390 Warszawa, Poland.

1. Protext 5.0 supports a multitude of languages including Polish and with a Star LC24-10 printer you shouldn't encounter any problems printing the results.
2. Yes, the Evesham upgrade works via the trapdoor, so there's little work involved installing one.
3. Soon.
4. The ATonce PC-AT emulator supports CGA (16 colour mode), Hercules, Toshiba and Olivetti (ie no EGA or VGA!)



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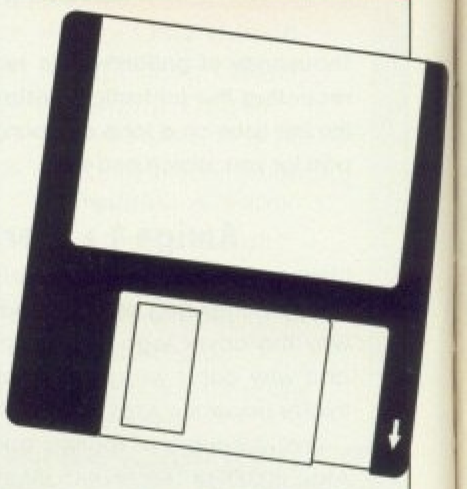
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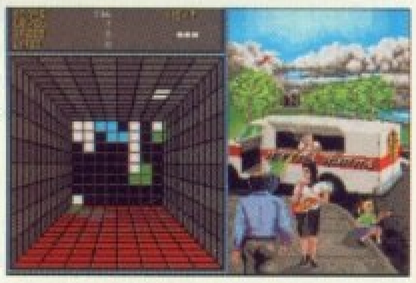
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(See page 110)

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Sexism – or salesmanship?

Stevie Kennedy examines the worrying trend towards stereotyped software

In 1980 we began to enjoy an entirely new kind of entertainment medium – games software. For the first time, instead of just watching from the stalls you could actually control how the fun progressed.

Now in bedrooms and arcades all over the country, Britain's games players can be found, eyes narrowed to slits in concentration, lips set in grimaces or mouthing curses as they battle it out with end-of-level nasties.

This is normally just the sign of a good game, but it may to cause concern when you consider that they are actively taking part in software which becomes more violent and sexually stereotyped by the day.

Way back in the beginning there was no such problem. Manic Miner for example, was a genderless little blob, and your average shoot-em-up was confined to the destruction of nondescript sprites.

The complaint that software was becoming increasingly male-dominated and violent would have fallen on deaf ears. Anyone can write a game if they like and you surely can't object to harmless fun blasting little green men, can you?

The danger signs first started to appear when early games such as Donkey Kong made rescuing a bimbo the ultimate aim. These chunky sprites were hardly realistic, but they were obviously female, helpless and wearing next to nothing. The fledgling stereotype was born.

Things didn't start to get out of hand however, until the graphical capabilities of 16-bit machines allowed game developers to put much more lifelike pictures on our screens.

The rather pathetic 8-bit strip poker games on the new computers became highly detailed and realistic, and a new area for exploitation was opened in the form of digitised animations.

Since about 1987 the software industry has seen an explosion in extremely dubious software and in marketing gimmicks, which many people find both tasteless and offensive.

Public Domain libraries are brimming over with obscene animations, slide show programs and so-called games based on the sex act itself.

To complete a computer game of any kind you must involve yourself in it. For simple shoot-em-ups, this means no more than the physical effort involved in thrashing the joystick around.

In the recent beat-em-ups and martial arts games however, it means identifying yourself with the large and easily recognisable sprite which represents your 'character' in the game.

You could argue that films encourage the same empathy, but I've yet to see the film that breaks down half way if you haven't identified with the hero.

The implication is that, if only at a subconscious level, the player absorbs a little of the game's philosophy.

In certain computer games this philosophy states that it is immaterial how you treat sensitive issues as long as you make a profit and the punter has a good laugh. The reasons why this tactic is successful are too many and too depressing to go into here.

However, it's not all gloom. There has been an almost imperceptible and very welcome reaction against this trend in the past year.

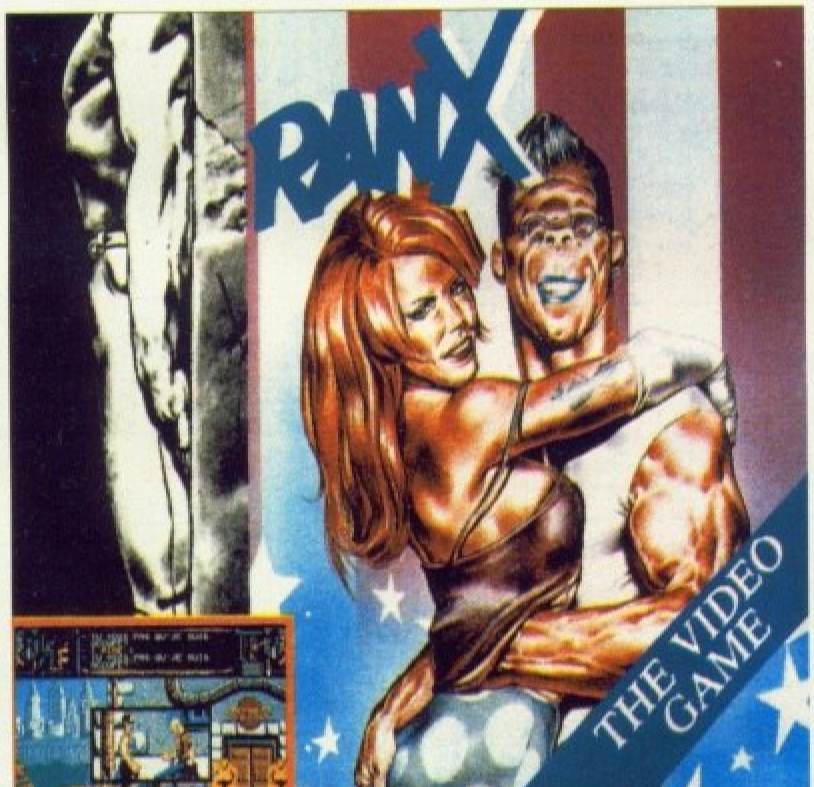
Games like New Zealand Story and Rainbow Islands have shown software bosses and gamers alike that you can make lots of cash and have loads of fun from harmless game concepts. It is a lesson they should learn well.

For now, it seems we're stuck with pervo-soft until the punters start to think more about what they buy for their kids.

Censorship in itself is both useless and immoral, especially in the case of computer software which can be distributed down any old telephone line. If we push the subject under a convenient legal rug, we'll just create a new market for the porn merchants who already make megabucks from magazines and videos.

Public debate is the only way to address this issue properly, and it was in the hope of stimulating such debate that this article was written.

Please write to us with your own views on sexism and stereotyping in software and any reactions you have to the position stated even if you think we're talking rubbish. Any debate is better than no debate.



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